



2005 STANDARD DRAWINGS

<http://www.udot.utah.gov/index.php/m=c/tid=1091>

Change 1, March 14, 2005

Memorandum UTAH DEPARTMENT OF TRANSPORTATION

DATE: March 14, 2005

TO: Region Directors
Project Engineers
Project Design Engineers
Project Managers
Consultants and Contractors

FROM: Barry Axelrod, CDT
Standards and Specifications

SUBJECT: 2005 Standard Drawings [U.S. Standard Unit (Inch-Pound Units)] Change 1,
Dated March 14, 2005

A new index and updated drawings are attached. Please take the following action with respect to the attached pages.

REMOVE

Cover
N/A
Index
N/A
Sheet 1B
Sheet 1C
AT 1
AT 2
AT 3
AT 5
AT 6
AT 7
AT 8
AT 9
AT 10
AT 11
AT 12
AT 13
AT 14
AT 15
AT 16
AT 17
N/A
BA 3
N/A
N/A

INSERT

Cover - revised for Change One
Memo - Insert after cover
Index - revised
Listing of Revised Standard Drawings, Change One
Sheet 1B – revised
Sheet 1C – revised
AT 1 – revised
AT 2 – revised
AT 3 – revised
AT 5 – revised
AT 6 – revised
AT 7 – revised
AT 8 – revised
AT 9 – revised
AT 10 – revised
AT 11 – revised
AT 12 – revised
N/A – drawing deleted
AT 14 – revised
AT 15 – revised
AT 16 – revised
AT 17 – revised
AT 18 – new
N/A – drawing deleted
BA 3A – new
BA 3B – new

BA 4B	BA 4B – revised
N/A	BA 4C – new
CC 7	N/A – drawing deleted
N/A	CC 7A – new
CC 8	N/A – drawing deleted
N/A	CC 8A – new
N/A	CC 8B – new
CC 9A	CC 9A – revised
CC 9B	CC 9B – revised
DD 4	DD 4 – revised
FG 3	FG 3 – revised
ST 5	ST 5 – revised

Electronic files for all Standards Drawings are available on the Internet from the “2005 Standards” Web page, under “2005 Standard Drawings.” Individual files are available in Microstation DGN format for download individually or by Series for PDF format files from the “2005 Individual Standard Drawings” link. The Series files are zipped in an EXE file. The entire set of drawings is available in Adobe pdf format in six files from the same area as the “2005 Current Drawings” link. The following page shows a break down of the six parts and the drawing series included in each part.

Any changes made to a digitally signed UDOT Standard Drawing Microstation DGN files automatically invalids the digital signatures.

If you have any questions or problems with the electronic files contact me at 801-964-4570 or by email at baxelrod@utah.gov.

STANDARD DRAWINGS INDEX (Change 1, Dated 03/14/05)
UTAH DEPARTMENT OF TRANSPORTATION

U	NUMBER	TITLE	CURRENT DATE
		Advanced Traffic Management System (AT)	
	AT 1	Legend Sheet	02/24/05
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	AT 3	Ramp Meter Sign Panel	02/24/05
	AT 4	Typical Ramp Meter Signal Head Mounting	01/01/05
	AT 5	Ramp Meter Loop Installation	02/24/05
	AT 6	Conduit Details	02/24/05
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	AT 10	CCTV Mounting Details	02/24/05
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	BA 1B	Precast Concrete Full Barrier Standard Section	01/01/05
	BA 1C	Precast Concrete Barrier Terminal For Speed \leq 40 MPH	01/01/05
	BA 1D	Precast Concrete Full Section Median Installation	01/01/05
	BA 1E	Precast Concrete Full Section Shoulder Applications	01/01/05
	BA 2	Precast Concrete Half Barrier Standard Section	01/01/05
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U	NUMBER	TITLE	CURRENT DATE
	BA 3B	Precast Concrete Constant Slope Transition Section For Crash Cushion And W-Beam Guardrail	02/24/05
	BA 4A	W-Beam Guardrail Hardware	01/01/05
	BA 4B	W-Beam Guardrail Transition	02/24/05
	BA 4C	W-Beam Guardrail Transition Curb Section	02/24/05
	BA 4D	W-Beam Guardrail Anchor Type I	01/01/05
	BA 4E	W-Beam Guardrail Installations	01/01/05
	BA 4F	W-Beam Guardrail Typical Divided Roadways	01/01/05
	BA 4G	W-Beam Guardrail Typical Multilane Arterial	01/01/05
	BA 4H	W-Beam Guardrail Typical 2 Lane 2 Way	01/01/05
	BA 4I	W-Beam Guardrail Buried In Backslope Terminal	01/01/05
	BA 4J	W-Beam Guardrail Buried In Backslope Terminal With Rub Rail	01/01/05
	BA 4K	W-Beam Guardrail Buried In Backslope Terminal Anchor	01/01/05
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	BA 4N	W-Beam Guardrail Nested Guardrail 18' 9" Span	01/01/05
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	BA 4P	W-Beam Guardrail With Precast Barrier For Span > 25'	01/01/05
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	CB 2	Open Curb Inlet	01/01/05
	CB 3	Shallow Catch Basin	01/01/05
	CB 4	Open Curb Shallow Catch Basin	01/01/05
	CB 5A	Standard Catch Basin and Cleanout Box	01/01/05
	CB 5B	Standard Catch Basin and Cleanout Box Section	01/01/05
	CB 6A	Drop Inlet Type "A"	01/01/05
	CB 6B	Berm Apron With Drop Inlet Type "A"	01/01/05
	CB 7A	Drop Inlet Type "B"	01/01/05
	CB 7B	Normal Apron With Drop Inlet Type "B"	01/01/05

U	NUMBER	TITLE	CURRENT DATE
	CB 8A	Double Catch Basin	01/01/05
	CB 8B	Double Catch Basin	01/01/05
	CB 9A	Standard Catch Basin And Cleanout Box Situation And Layout	01/01/05
	CB 9B	Standard Catch Basin And Cleanout Box Section Details	01/01/05
	CB 9C	Standard Catch Basin And Cleanout Box Schedule Of Installation 18" to 42" RCP 12" to 48" CMP	01/01/05
	CB 9D	Standard Catch Basin And Cleanout Box Schedule Of Installation 48" to 66" RCP 60" to 78" CMP	01/01/05
	CB 10A	Standard Catch Basin And Cleanout Box Situation And Layout	01/01/05
	CB 10B	Standard Catch Basin And Cleanout Box Section Details	01/01/05
	CB 10C	Standard Catch Basin And Cleanout Box Schedule Of Installation 42" to 60" RCP 48" to 72" CMP	01/01/05
	CB 11	Standard Manhole	01/01/05
		Crash Cushions (CC)	
	CC 1	Crash Cushion Markings	01/01/05
	CC 2	Crash Cushion Drainage Details Guideline A	01/01/05
	CC 3	Crash Cushion Drainage Details Guideline B	01/01/05
	CC 4	Details For Placement Crash Cushions Type A, B, And D	01/01/05
	CC 5	Grading And Placement Details Crash Cushion Type C	01/01/05
	CC 6	Crash Cushion Type E Sand Barrel Details	01/01/05
	CC 7A	Grading And Installation Details Crash Cushion Type F Quad Trend 350	02/24/05
	CC 7B	Reserved For Future Use	
	CC 8A	Grading And Installation Details Crash Cushion Type G	02/24/05
	CC 8B	Grading And Installation Details For "3R" Projects Crash Cushion Type G	02/24/05
	CC 9A	Grading And Installation Details Crash Cushion Type H	02/24/05
	CC 9B	Grading And Installation Details Crash Cushion Type H (Parabolic Flare)	02/24/05
		Diversion Boxes (DB)	
	DB 1A	Standard Diversion Box/Cover Plate/Grating For 18" DIA. or 24" DIA. Pipe	01/01/05
	DB 1B	Standard Diversion Box Hinged Lid Details For 18" DIA. or 24" DIA. Pipe	01/01/05

U	NUMBER	TITLE	CURRENT DATE
	DB 1C	Standard Diversion Box Bicycle - Safe Grating Details For 18" DIA. or 24" DIA. Pipe	01/01/05
	DB 1D	Standard Diversion Box Three Gate Box Sections For 18" DIA. or 24" DIA. Pipe	01/01/05
	DB 1E	Standard Diversion Box Three Gate Box Sections For 18" DIA. or 24" DIA. Pipe	01/01/05
	DB 1F	Standard Diversion Box Three Gate Box Sections For 18" DIA. or 24" DIA. Pipe	01/01/05
	DB 2A	Standard Diversion Box w/Interchangeable Walls, Bottom Slab, Walls And Apron Details	01/01/05
	DB 2B	Standard Diversion Box w/Interchangeable Walls, Quantities Schedule	01/01/05
	DB 2C	Standard Diversion Box w/Interchangeable Walls, Hand Slide Gate Details	01/01/05
	DB 2D	Standard Diversion Box Type "G" Hand Slide Gate Details	01/01/05
	DB 2E	Standard Diversion Box Hinged Lid (Solid Cover Plate) Type "A" Details Type I Plan	01/01/05
	DB 2F	Standard Diversion Box Hinged Lid (Solid Cover Plate) Type "A" Details Type II Plan	01/01/05
	DB 2G	Standard Diversion Box Hinged Lid Solid Cover Type "B" Details	01/01/05
	DB 2H	Standard Diversion Box Hinged Lid Solid Cover Type "B" And "C" Details	01/01/05
	DB 3A	Standard Diversion Box With Manhole Cover Situation And Layout	01/01/05
	DB 3B	Standard Diversion Box With Manhole Cover Up To 42" RCP And Up To 54" CMP	01/01/05
	DB 3C	Standard Diversion Box With Manhole Cover 48" to 72" RCP And 60" to 84" CMP	01/01/05
	DB 4	Standard Transition Concrete Lined Ditch To Pipe Or Diversion Box	01/01/05
		Design Drawings (DD)	
	DD 1	Superelevation And Widening	01/01/05
	DD 2	Surface Ditch, Benched Slope, And Cut Ditch Details	01/01/05
	DD 3	Climbing Lanes	01/01/05
	DD 4	Geometric Design for Freeways (Roadway)	02/24/05
	DD 5	Entrance And Exit Ramps At Crossroads	01/01/05
	DD 6	Entrance And Exit Ramp Geometrics	01/01/05

U	NUMBER	TITLE	CURRENT DATE
	DD 7	Freeway Crossover	01/01/05
	DD 8	Structural Geometric Design Standards For Clearances	01/01/05
	DD 9	Structural Geometric Design Standards	01/01/05
	DD 10	Railroad Clearances At Highway Overpass Structures	01/01/05
	DD 11	Rural Multi Lane Highways Other Than Freeways	01/01/05
	DD 12	Rural Two Lane Highways	01/01/05
	DD 13	Frontage And Access Roads (Under 50 ADT)	01/01/05
	DD 14	Typical Rural 2 Lane Road With Median Lane And Deceleration Lane For Intersecting Crossroads	01/01/05
		Drainage (DG)	
	DG 1	Fill Height for Metal Pipe (Steel)	01/01/05
	DG 2	Fill Height for Metal Pipe (Aluminum)	01/01/05
	DG 3	Maximum Fill Height For HDPE And PVC Pipes	01/01/05
	DG 4	Pipe Minimum Cover	01/01/05
	DG 5	Plastic Pipe, Metal Pipe Or Pipe Arch Culvert Bedding	01/01/05
	DG 6	Precast Concrete Pipe Culvert	01/01/05
	DG 7	Gasketed Joints Or Coupling Bands For CMP	01/01/05
	DG 8	Metal Culvert End Section	01/01/05
	DG 9	Miscellaneous Pipe Details	01/01/05
		Environmental Controls (EN)	
	EN 1	Temporary Erosion Control (Check Dams)	01/01/05
	EN 2	Temporary Erosion Control (Silt Fence)	01/01/05
	EN 3	Temporary Erosion Control (Slope Drain And Temporary Berm)	01/01/05
	EN 4	Temporary Erosion Control (Drop Inlet Barriers)	01/01/05
	EN 5	Temporary Erosion Control (Sediment Trap And Curb Inlet Barrier)	01/01/05
		Fence And Gates (FG)	
	FG 1A	Right Of Way Fence And Gates (Wood Post)	01/01/05
	FG 1B	Right Of Way Fence And Gates (Wood Post)	01/01/05
	FG 2A	Right Of Way Fence And Gates (Metal Post)	01/01/05

U	NUMBER	TITLE	CURRENT DATE
	FG 2B	Right Of Way Fence And Gates (Metal Post)	01/01/05
	FG 3	Swing Gates Type I For Gates Less Than 17'	02/24/05
	FG 4	Deer Gates	01/01/05
	FG 5	Swing Gates Type II For Gates Wider Than 17'	01/01/05
	FG 6	Chain Link Fence	01/01/05
		Grates, Frames, And Trash Racks (GF)	
	GF 1	Manhole Frame And Grated Cover	01/01/05
	GF 2	Manhole Frame And Solid Cover	01/01/05
	GF 3	Rectangular Grate And Frame	01/01/05
	GF 4	Directional Flow Grate And Frame	01/01/05
	GF 5	Solid Cover And Frame	01/01/05
	GF 6	Manhole Steps	01/01/05
	GF 7	Standard Screw Gate And Frame	01/01/05
	GF 8	2' x 2' Grate And Frame	01/01/05
	GF 9	28" x 24" Directional Flow Grate And Frame	01/01/05
	GF 10	Standard Trash Racks 90 ° X-ing Angle	01/01/05
	GF 11	Standard Trash Racks	01/01/05
	GF 12	Standard Trash Racks	01/01/05
	GF 13	Open Curb Inlet Grate and Frame	01/01/05
	GF 14	Solid Cover For Std Dwg DB 1 MS-18 Loading	01/01/05
	GF 15	Standard Screw Gate And Frame	01/01/05
		General Road Work (GW)	
	GW 1	Raised Median And Plowable End Section	01/01/05
	GW 2	Concrete Curb And Gutter	01/01/05
	GW 3	Concrete Curb And Gutter Details	01/01/05
	GW 4	Concrete Driveways And Sidewalks	01/01/05
	GW 5A	Pedestrian Access	01/01/05
	GW 5B	Pedestrian Access	01/01/05
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U	NUMBER	TITLE	CURRENT DATE
	GW 6	Right Of Way Marker	01/01/05
	GW 7	Newspaper And Mailbox Stop Layout	01/01/05
	GW 8	Newspaper And Mailbox Support Hardware	01/01/05
	GW 9	Delineation Hardware	01/01/05
	GW 10	Delineation Application	01/01/05
	GW 11	Sidewalks And Shoulders On Urban Roadways	01/01/05
		Paving (PV)	
	PV 1	Joints For Highways With Concrete Traffic Lanes And Shoulders	01/01/05
	PV 2	Pavement/Approach Slab Details	01/01/05
	PV 3	Concrete Pavement Details For Urban And Interstate	01/01/05
	PV 4	Concrete Pavement Details For Urban And Interstate	01/01/05
	PV 5	Urban Concrete Pavement Details	01/01/05
	PV 6	Rumble Strips	01/01/05
	PV 7	Rumble Strips - Typical Application	01/01/05
	PV 8	Note Used	
	PV 9	Dowel Bar Retrofit	01/01/05
		Signals (SL)	
	SL 1A	Traffic Signal Mast Arm Pole And Luminaire Extension	01/01/05
	SL 1B	Traffic Signal Mast Arm Pole And Luminaire Extension	01/01/05
	SL 2	Traffic Signal Mast Arm Details 30' Thru 75'	01/01/05
	SL 3	Underground Service Pedestal Details	01/01/05
	SL 4	Traffic Signal Mast Arm Pole Foundation	01/01/05
	SL 5	Traffic Signal Pole	01/01/05
	SL 6	Pole Mounted Power Source Details	01/01/05
	SL 7	Span Wire Signal Pole Details	01/01/05
	SL 8	Signal Head Details	01/01/05
	SL 9	Pedestrian Signal Assembly	01/01/05
	SL 10	Traffic Signal Controller Base Details	01/01/05

U	NUMBER	TITLE	CURRENT DATE
	SL 11	Traffic Signal Loop Detector Details	01/01/05
	SL 12	Traffic Counting Loop Detector Details	01/01/05
	SL 13	Not Used	
	SL 14	Highway Luminaire Pole Ground Mount	01/01/05
	SL 15	Luminaire Slip Base Details	01/01/05
	SL 16	Highway Luminaire Pole Barrier Mount	01/01/05
	SL 17	Highway Luminaire Pole Foundation Extension	01/01/05
	SL 18	Single Transformer Substation Details	01/01/05
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	SN 1	Bridge Load Limits Signs	01/01/05
	SN 2	School Speed Limit Assembly	01/01/05
	SN 3	Overhead School Speed Limit Assembly	01/01/05
	SN 4	Flashing Stop Sign	01/01/05
	SN 5	Typical Installation For Milepost Signs	01/01/05
	SN 6	Speed Reduction Sign Sequence	01/01/05
	SN 7	Placement of Ground Mounted Signs	01/01/05
	SN 8	Ground Mounted Timber Sign Post (P1)	01/01/05
	SN 9	Ground Mounted Tubular Steel Sign Post (P2)	01/01/05
	SN 10	Ground Mounted Square Steel Sign Post (P3)	01/01/05
	SN 11	Slipbase Ground Mounted Tubular Steel Sign Post (P4)	01/01/05
	SN 12A	Ground Mounted Sign Installation Details	01/01/05
	SN 12B	Ground Mounted Sign Installation Details	01/01/05
	SN 12C	Ground Mounted Sign Installation Details	01/01/05
		Striping (ST)	
	ST 1	Object Markers "T" Intersection And Pavement Transition Guidance	01/01/05
	ST 2	Freeway Crossover Markings	01/01/05
	ST 3	Typical Pavement Markings	01/01/05
	ST 4	Crosswalks, Parking And Intersection Approaches	01/01/05
	ST 5	Painted Median And Auxiliary Lane Details	02/24/05

U	NUMBER	TITLE	CURRENT DATE
	ST 6	Passing/Climbing Lanes Traffic Control	01/01/05
	ST 7	Pavement Markings And Signs At Railroad Crossing	01/01/05
	ST 8	Plowable Pavement Markers	01/01/05
	ST 9	School Crossing And School Message	01/01/05
		Structures And Walls (SW)	
	SW 1A	Welded End Guard Unit	01/01/05
	SW 1B	Precast Concrete Cattle Guard	01/01/05
	SW 2	Noise Wall Placement Area	01/01/05
	SW 3A	Precast Concrete Noise Wall 1 Of 2	01/01/05
	SW 3B	Precast Concrete Noise Wall 2 Of 2	01/01/05
	SW 4A	Precast Concrete Retaining/Noise Wall 1 Of 2	01/01/05
	SW 4B	Precast Concrete Retaining/Noise Wall 2 Of 2	01/01/05
		Traffic Control (TC)	
	TC 1A	Construction Zone Channelization Devices	01/01/05
	TC 1B	Construction Zone Signing	01/01/05
	TC 2A	Traffic Control General	01/01/05
	TC 2B	Traffic Control General	01/01/05
	TC 3	Traffic Control Project Limit Signing	01/01/05
	TC 4	Traffic Control Urban Intersections With Roadways Under 50 MPH	01/01/05
	TC 5	Traffic Control Urban Intersections With Roadways Under 50 MPH	01/01/05
	TC 6	Traffic Control Pedestrian Routing	01/01/05
	TC 7	Traffic Control Road Closed, Detour	01/01/05
	TC 8	Traffic Control Lane Closure	01/01/05
	TC 9	Traffic Control Multilane Closure	01/01/05
	TC 10	Traffic Control Expressway And Freeway Crossover/Turn Around	01/01/05
	TC 11	Traffic Control Exit Ramp Gore	01/01/05
	TC 12	Traffic Control Entrance Ramp Gore	01/01/05
	TC 13	Traffic Control Shoulder-Haul Road	01/01/05

U	NUMBER	TITLE	CURRENT DATE
	TC 14	Traffic Control Flagging Operation	01/01/05
	TC 15	Traffic Control 2 Lane/2 Way Seal Coat With Cover Material	01/01/05
	TC 16	Traffic Control Pavement Marking	01/01/05

Listing of Revised Standard Drawings

Change One

Revised February 24, 2005

AT 1	Legend Sheet	02/24/2005
AT 2	Ramp Meter Details	02/24/2005
AT 3	Ramp Meter Sign Panel	02/24/2005
AT 5	Ramp Meter Loop Installation	02/24/2005
AT 6	Conduit Details	02/24/2005
AT 7	Polymer-Concrete Junction Box Details	02/24/2005
AT 8	ATMS Cabinet	02/24/2005
AT 9	ATMS Cabinet Disconnect And Transformer Frame	02/24/2005
AT 10	CCTV Mounting Details	02/24/2005
AT 11	CCTV Pole Details	02/24/2005
AT 12	CCTV Pole Foundation For Dedicated CCTV Pole	02/24/2005
AT 13	Deleted	N/A
AT 14	Weigh In Motion Piezo Details	02/24/2005
AT 15	RWIS Site And Foundation Details	02/24/2005
AT 16	RWIS Tower Base And Service Pad Layout	02/24/2005
AT 17	Ground Rod Installation And Tower Grounding	02/24/2005
AT 18	TMS Detection Zone Layout	02/24/2005
BA 3	Deleted	N/A
BA 3A	Cast In Place Constant Slope Barrier	02/24/2005
BA 3B	Precast Concrete Constant Slope Transition Section For Crash Cushion And W-Beam Guardrail	02/24/2005
BA 4B	W-Beam Guardrail Transition	02/24/2005
BA 4C	W-Beam Guardrail Transition Curb Section	02/24/2005
CC 7	Deleted	N/A
CC 7A	Grading And Installation Details Crash Cushion Type F Quad Trend 350	02/24/2005
CC 7B	Reserved For Future Use	N/A
CC 8	Deleted	N/A
CC 8A	Grading And Installation Details Crash Cushion Type G	02/24/2005
CC 8B	Grading And Installation Details For "3R" Projects Crash Cushion Type G	02/24/2005
CC 9A	Grading And Installation Details Crash Cushion Type H	02/24/2005
CC 9B	Grading And Installation Details Crash Cushion Type H (Parabolic Flare)	02/24/2005
DD 4	Geometric Design for Freeways (Roadway)	02/24/2005
FG 3	Swing Gates Type I For Gates Less Than 17'	02/24/2005
ST 5	Painted Median And Auxiliary Lane Details	02/24/2005

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☒ MARKED BOXES INDICATE DRAWINGS APPLICABLE TO THIS PROJECT

STANDARD DRAWING INDEX SHEET

UTAH DEPARTMENT OF TRANSPORTATION

STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION

DWG. NO.	DESCRIPTION	DATE
	Fence and Gates (FG)	
FG 1 A	RIGHT OF WAY FENCE AND GATES (WOOD POST)	01-01-05
FG 1 B	RIGHT OF WAY FENCE AND GATES (WOOD POST)	01-01-05
FG 2 A	RIGHT OF WAY FENCE AND GATES (METAL POST)	01-01-05
FG 2 B	RIGHT OF WAY FENCE AND GATES (METAL POST)	01-01-05
FG 3	SWING GATES TYPE 1 FOR GATES LESS THAN 17'	02-24-05
FG 4	DEER GATES	01-01-05
FG 5	SWING GATES TYPE II FOR GATES WIDER THAN 17'	01-01-05
FG 6	CHAIN LINK FENCE	01-01-05
	Grates, Frames and Trash Racks (GF)	
GF 1	MANHOLE FRAME AND GRATED COVER	01-01-05
GF 2	MANHOLE FRAME AND SOLID COVER	01-01-05
GF 3	RECTANGULAR GRATE AND FRAME	01-01-05
GF 4	DIRECTIONAL FLOW GRATE AND FRAME	01-01-05
GF 5	SOLID COVER AND FRAME	01-01-05
GF 6	MANHOLE STEPS	01-01-05
GF 7	STANDARD SCREW GATE AND FRAME	01-01-05
GF 8	2' x 2' GRATE AND FRAME	01-01-05
GF 9	28" x 24" DIRECTIONAL FLOW GRATE AND FRAME	01-01-05
GF 10	STANDARD TRASH RACKS 90° X-ING ANGLE	01-01-05
GF 11	STANDARD TRASH RACKS	01-01-05
GF 12	STANDARD TRASH RACKS	01-01-05
GF 13	OPEN CURB INLET GRATE AND FRAME	01-01-05
GF 14	SOLID COVER FOR STD DWG DB 1 MS-18 LOADING	01-01-05
GF 15	STANDARD SCREW GATE AND FRAME	01-01-05
	General Road Work (GW)	
GW 1	RAISED MEDIAN AND PLOWABLE END SECTION	01-01-05
GW 2	CONCRETE CURB AND GUTTER	01-01-05
GW 3	CONCRETE CURB AND GUTTER DETAILS	01-01-05
GW 4	CONCRETE DRIVEWAYS AND SIDEWALKS	01-01-05
GW 5A	PEDESTRIAN ACCESS	01-01-05
GW 5B	PEDESTRIAN ACCESS	01-01-05
GW 5C	PEDESTRIAN ACCESS	01-01-05
GW 6	RIGHT OF WAY MARKER	01-01-05
GW 7	NEWSPAPER AND MAILBOX STOP LAYOUT	01-01-05
GW 8	NEWSPAPER AND MAILBOX SUPPORT HARDWARE	01-01-05
GW 9	DELINEATION HARDWARE	01-01-05
GW 10	DELINEATION APPLICATION	01-01-05
GW 11	SIDEWALKS AND SHOULDERS ON URBAN ROADWAYS	01-01-05

	DWG. NO.	DESCRIPTION	DATE
		Paving (PV)	
	PV 1	JOINTS FOR HIGHWAYS WITH CONCRETE TRAFFIC LANES AND SHOULDERS	01-01-05
	PV 2	PAVEMENT/APPROACH SLAB DETAILS	01-01-05
	PV 3	CONCRETE PAVEMENT DETAILS FOR URBAN AND INTERSTATE	01-01-05
	PV 4	CONCRETE PAVEMENT DETAILS FOR URBAN AND INTERSTATE	01-01-05
	PV 5	URBAN CONCRETE PAVEMENT DETAILS	01-01-05
	PV 6	RUMBLE STRIPS	01-01-05
	PV 7	RUMBLE STRIPS-TYPICAL APPLICATION	01-01-05
	PV 8	NOT USED	
	PV 9	DOWEL BAR RETROFIT	01-01-05
		Signals (SL)	
	SL 1A	TRAFFIC SIGNAL MAST ARM POLE AND LUMINAIRE EXTENSION	01-01-05
	SL 1B	TRAFFIC SIGNAL MAST ARM POLE AND LUMINAIRE EXTENSION	01-01-05
	SL 2	TRAFFIC SIGNAL MAST ARM DETAILS 30' THRU 75'	01-01-05
	SL 3	UNDERGROUND SERVICE PEDESTAL DETAILS	01-01-05
	SL 4	TRAFFIC SIGNAL MAST ARM POLE FOUNDATION	01-01-05
	SL 5	TRAFFIC SIGNAL POLE	01-01-05
	SL 6	POLE MOUNTED POWER SOURCE DETAILS	01-01-05
	SL 7	SPAN WIRE SIGNAL POLE DETAILS	01-01-05
	SL 8	SIGNAL HEAD DETAILS	01-01-05
	SL 9	PEDESTRIAN SIGNAL ASSEMBLY	01-01-05
	SL 10	TRAFFIC SIGNAL CONTROLLER BASE DETAILS	01-01-05
	SL 11	TRAFFIC SIGNAL LOOP DETECTOR DETAILS	01-01-05
	SL 12	TRAFFIC COUNTING LOOP DETECTOR DETAILS	01-01-05
	SL 13	NOT USED	
	SL 14	HIGHWAY LUMINAIRE POLE GROUND MOUNT	01-01-05
	SL 15	LUMINAIRE SLIP BASE DETAILS	01-01-05
	SL 16	HIGHWAY LUMINAIRE POLE BARRIER MOUNT	01-01-05
	SL 17	HIGHWAY LUMINAIRE POLE FOUNDATION EXTENSION	01-01-05
	SL 18	SINGLE TRANSFORMER SUBSTATION DETAILS	01-01-05
		Signs (SN)	
	SN 1	BRIDGE LOAD LIMITS SIGNS	01-01-05
	SN 2	SCHOOL SPEED LIMIT ASSEMBLY	01-01-05
	SN 3	OVERHEAD SCHOOL SPEED LIMIT ASSEMBLY	01-01-05
	SN 4	FLASHING STOP SIGN	01-01-05
	SN 5	TYPICAL INSTALLATION FOR MILEPOST SIGNS	01-01-05
	SN 6	SPEED REDUCTION SIGN SEQUENCE	01-01-05
	SN 7	PLACEMENT OF GROUND MOUNTED SIGNS	01-01-05
	SN 8	GROUND MOUNTED TIMBER SIGN POST (P1)	01-01-05
	SN 9	GROUND MOUNTED TUBULAR STEEL SIGN POST (P2)	01-01-05
	SN 10	GROUND MOUNTED SQUARE STEEL SIGN POST (P3)	01-01-05
	SN 11	SLIPBASE GROUND MOUNTED TUBULAR STEEL SIGN POST (P4)	01-01-05
	SN 12A	GROUND MOUNTED SIGN INSTALLATION DETAILS	01-01-05
	SN 12B	GROUND MOUNTED SIGN INSTALLATION DETAILS	01-01-05
	SN 12C	GROUND MOUNTED SIGN INSTALLATION DETAILS	01-01-05

[illegible][illegible]

4-MAR-2005 DGN File: N:\Esd\Standard Drawings\Imperial\2005Approved\XChange\Approved\sheet1.c.dgn

☒ MARKED BOXES INDICATE DRAWINGS APPLICABLE TO THIS PROJECT

14-MAR-2005 DGN: F:\et\N\etad\Standard Drawings\Imperial\2005\Approved\Change\Approved\etad2.dgn

ATMS LINE STYLE LEGEND

FUTURE OR EXISTING	REQ'D	TYPE	CONDUCTOR TYPES
----#d----	—#D—	4-CONDUIT DUCT BANK (# INDICATES NUMBER OF 4-CONDUIT DUCT BANKS 1, 2, OR 4)	FIBER OPTIC
---hv#----	—HV#—	HIGH VOLTAGE CONDUIT (# INDICATES SIZE IN INCHES - 1 1/2, 2, 3, OR 4)	120, 240, OR 480VAC
---lv#----	—LV#—	LOW VOLTAGE CONDUIT (# INDICATES SIZE IN INCHES - 1 1/2, 2, 3, OR 4)	COPPER COMM OR POWER LESS THAN 120VAC
---tcl#----	—TAL#—	TAIL CIRCUIT COMMUNICATIONS CONDUIT (# INDICATES SIZE IN INCHES - 1 1/2, 2, 3, OR 4)	FIBER OPTIC OR COPPER COMM
---spr#----	—SPR#—	SPARE CONDUIT (# INDICATES SIZE IN INCHES - 1 1/2, 2, 3, OR 4)	EMPTY
---xc----		EXISTING CONDUIT	UNKNOWN OR AS SPECIFIED
---ohp----	—OHP—	OVERHEAD POWER	N/A
---ohc----	—OHC—	OVERHEAD COMMUNICATIONS	N/A
---ohx----		EXISTING OVERHEAD CONDUCTORS	UNKNOWN OR AS SPECIFIED

ABBREVIATIONS

ABBREVIATION	DEFINITION
ATMS	ADVANCED TRAFFIC MANAGEMENT SYSTEM
AWG	AMERICAN WIRE GAUGE
CAB	CABINET
CAT-#	CATEGORY - (# INDICATES CATEGORY NUMBER) CONDUCTOR
CCTV	CLOSED CIRCUIT TELEVISION
COMM	COMMUNICATIONS
DLC	DETECTOR LOOP LEAD-IN CABLES
DIA	DIAMETER
FRE	FIBERGLASS REINFORCED EPOXY
GND	GROUND CONDUCTOR
GRC	GALVANIZED RIGID CONDUIT
HDPE	HIGH DENSITY POLYETHYLENE
HFC	HYBRID FIBER CABLE
HMA	HOT MIX ASPHALT
LAN	LOCAL AREA NETWORK
NID	NON-INTRUSIVE DETECTOR
NTS	NOT TO SCALE
OC	OFF CENTER
PC	POLYMER CONCRETE
PCCP	PORTLAND CEMENT CONCRETE PAVEMENT
PTCC	PAN-TILT CONTROL CABLE
PTZ	PAN/TILT/ZOOM
PWR	POWER
RMS	RAMP METER STATION
REQ'D	REQUIRED
ROW	RIGHT-OF-WAY
RPU	REMOTE PROCESSING UNIT (FOR RWIS)
RWIS	ROADWAY WEATHER INFORMATION SYSTEM
## SMF	SINGLE MODE FIBER (## INDICATES NUMBER OF STRANDS)
TMS	TRAFFIC MONITORING STATION
TOC	TRAFFIC OPERATIONS CENTER
TSC	TRAFFIC SIGNAL CONTROLLER
TYP	TYPICAL
VAC	VOLTS (ALTERNATING CURRENT)
VID	VIDEO
VMS	VARIABLE MESSAGE SIGN
WIM	WEIGHT-IN-MOTION
WP	WORKING POINT

DETAIL CALLOUT LEGEND

CALLOUT	MEANING
	SEE DETAIL "X" ON SHEET "Y"

CONDUCTOR LEGEND

CALLOUT	DEFINITION
X-Y(Z)	X=QUANTITY Y=WIRE SIZE (AWG) Z=PURPOSE

EQUIPMENT LEGEND

FUTURE OR EXISTING	REQ'D	EQUIPMENT TYPE
		TYPE I FREEWAY VARIABLE MESSAGE SIGN (VMS) ASSEMBLY
		ROADWAY WEATHER INFORMATION SYSTEM
		OMNI DIRECTIONAL ANTENNA
		YAGI DIRECTIONAL ANTENNA
		CCTV CAMERA/PTZ/POLE AND FOUNDATION
		VIDEO DETECTION
		NON-INTRUSIVE DETECTOR
		DETECTOR LOOP
		TYPE I- POLYMER CONCRETE JUNCTION BOX
		TYPE II- POLYMER CONCRETE JUNCTION BOX
		TYPE III- POLYMER CONCRETE JUNCTION BOX
		COMMUNICATIONS VAULT
		COMMUNICATIONS HUB
		ATMS CABINET
		SIGNAL CABINET
		ADVANCED FLASHING BEACON SIGN ON POLE
		MASTARM WITH SIGNAL HEADS
		SIGNAL HEAD
		POLE
		POWER POLE
		POLE MOUNTED METER
		POWER SERVICE POINT
		UNDERGROUND SERVICE PEDESTAL
		POLE MOUNTED TRANSFORMER
		PAD MOUNTED TRANSFORMER
		PAD MOUNTED TRANSFORMER WITH DISCONNECT

ELECTRICAL SCHEMATIC LEGEND

FUTURE OR EXISTING	SYMBOL	EQUIPMENT
		BREAKER
		METER
		NEUTRAL LUG
		EQUIPMENT GROUND LUG
		GROUND ROD
		TRANSFORMER
		BLADE SWITCH
		FUSE

UTAH DEPARTMENT OF TRANSPORTATION

STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION

SALT LAKE COUNTY

RECOMMENDED FOR APPROVAL

CHAIRMAN STANDARDS COMMITTEE

APPROVED

DEPUTY DIRECTOR

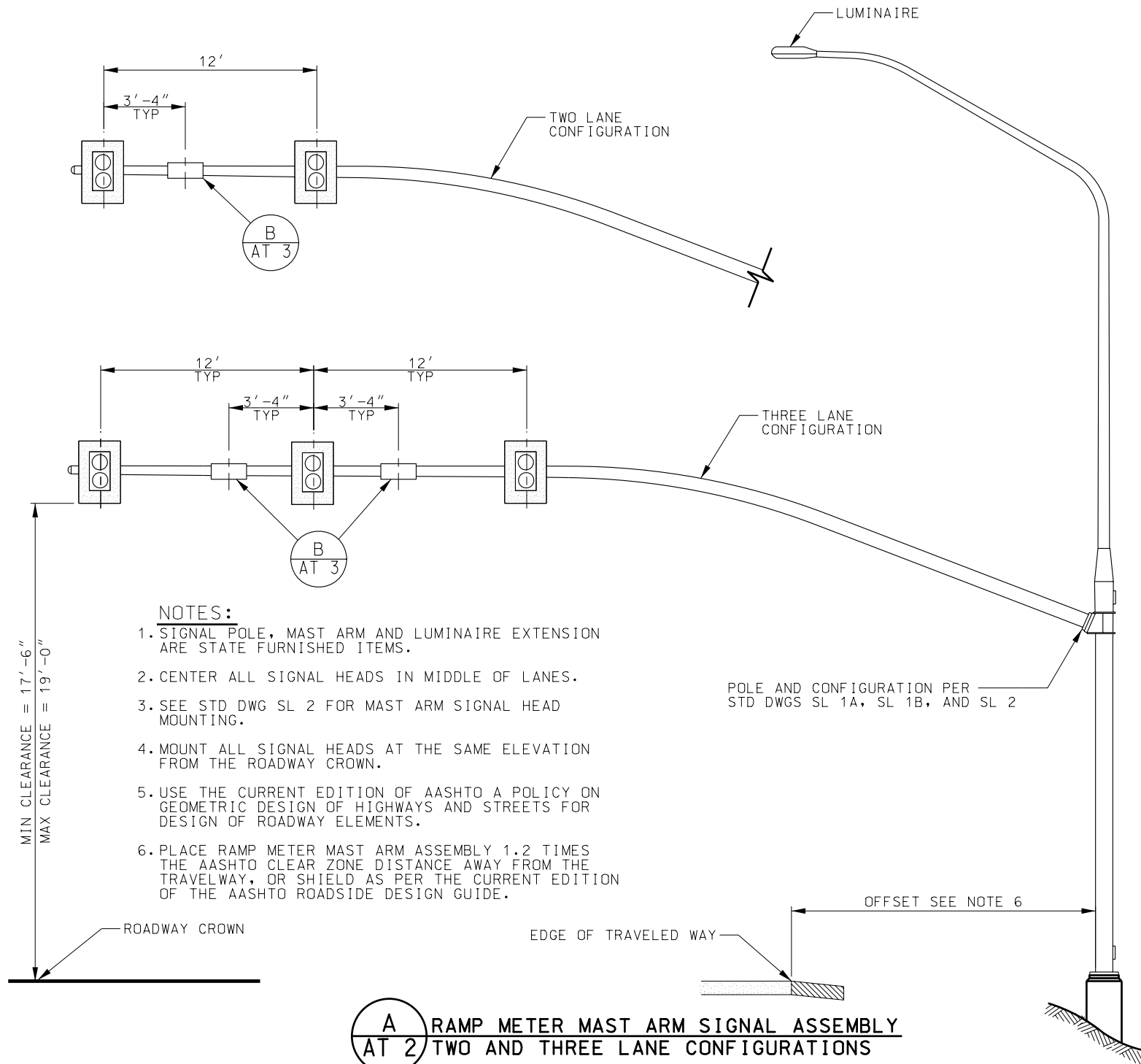
LEGEND SHEET

STANDARD DRAWING TITLE

STD DWG
AT 1

REVISIONS
1 2/24/05 S.S. DRAWING COMPLETELY REVISED.

REMARKS



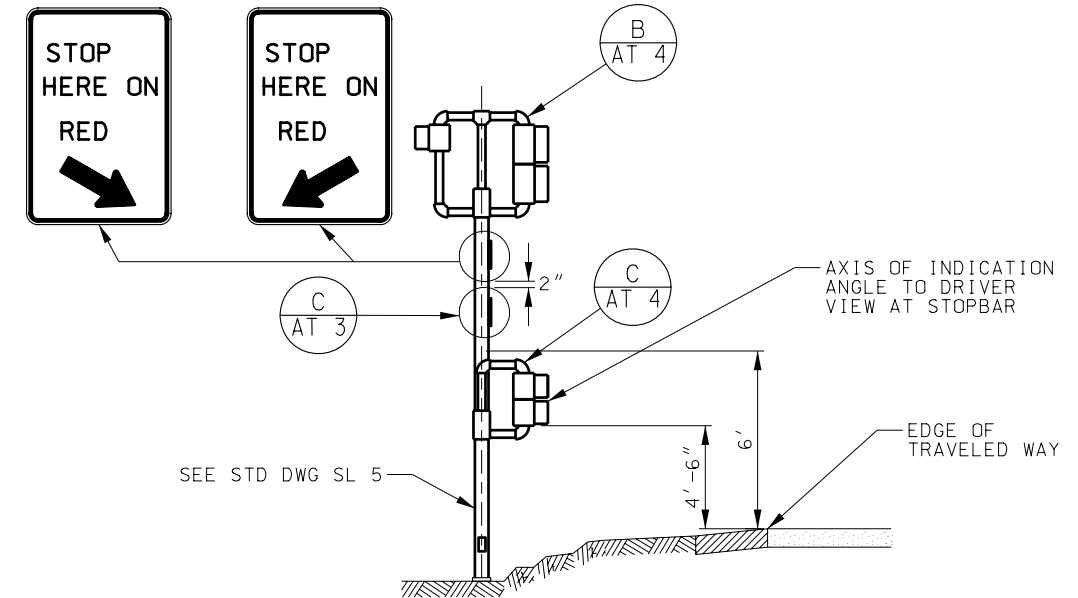
A RAMP METER MAST ARM SIGNAL ASSEMBLY AT 2 TWO AND THREE LANE CONFIGURATIONS

NOTES:

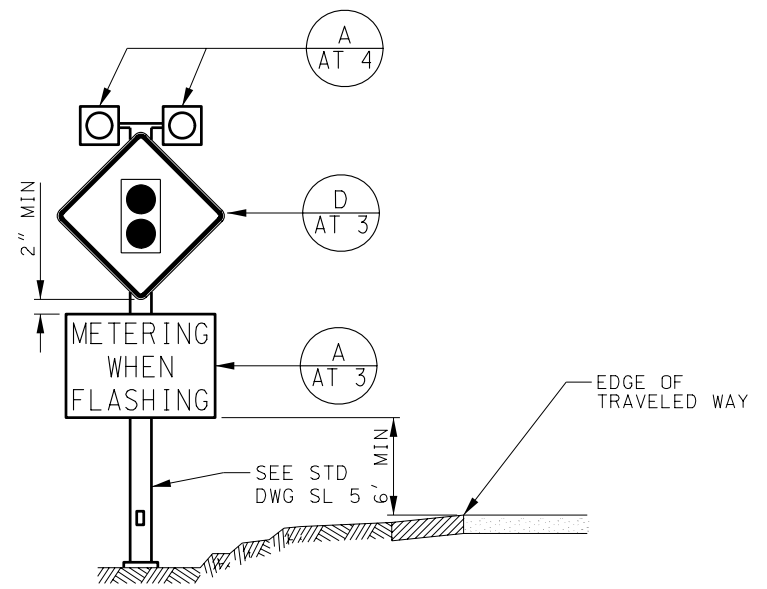
1. SIGNAL POLE, MAST ARM AND LUMINAIRE EXTENSION ARE STATE FURNISHED ITEMS.
2. CENTER ALL SIGNAL HEADS IN MIDDLE OF LANES.
3. SEE STD DWG SL 2 FOR MAST ARM SIGNAL HEAD MOUNTING.
4. MOUNT ALL SIGNAL HEADS AT THE SAME ELEVATION FROM THE ROADWAY CROWN.
5. USE THE CURRENT EDITION OF AASHTO A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS FOR DESIGN OF ROADWAY ELEMENTS.
6. PLACE RAMP METER MAST ARM ASSEMBLY 1.2 TIMES THE AASHTO CLEAR ZONE DISTANCE AWAY FROM THE TRAVELWAY, OR SHIELD AS PER THE CURRENT EDITION OF THE AASHTO ROADSIDE DESIGN GUIDE.

R10-6 (LEFT)
24" x 36"

R10-6 (RIGHT)
24" x 36"



B RAMP METER POLE MOUNT SIGNAL ASSEMBLY AT 2 WITH ENFORCEMENT INDICATION



C RAMP METER ADVANCED FLASHING BEACON ASSEMBLY AT 2

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION

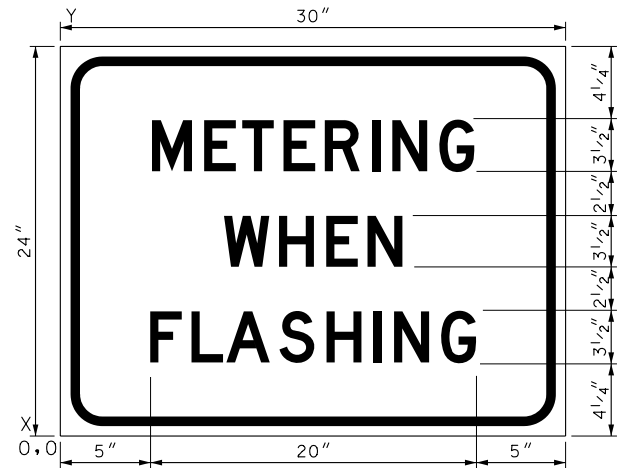
RECOMMENDED FOR APPROVAL
SALVADOR
CHAIRMAN STANDARDS COMMITTEE
APPROVED
DEPUTY DIRECTOR

RAMP METER
DETAILS

STD DWG
AT 2

REV	NO.	DATE	APPR.	REMARKS
1	2/24/05			S.S. REVISED 'ADVANCED FLASHING BEACON ASSEMBLY' DETAIL AND ADDED 3 LANE MAST ARM ASSEMBLY.

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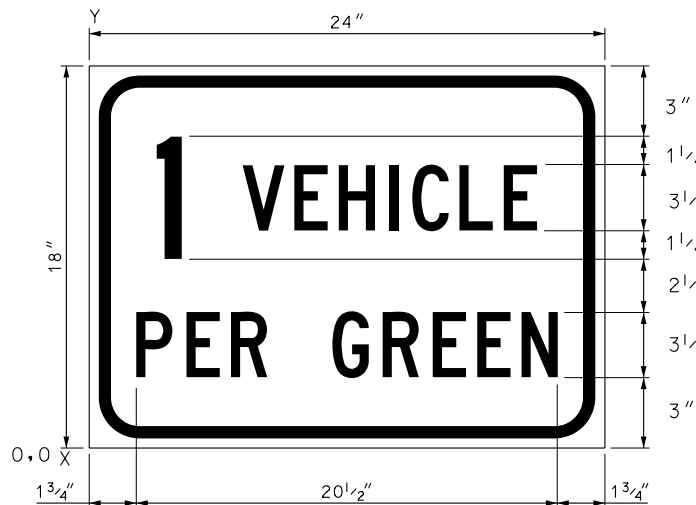


WIDTH x HEIGHT	30" x 24"
EDGE TO BORDER	3/8"
BORDER WIDTH	5/8"
CORNER RADIUS	2"
MOUNTING	GROUND
BACKGROUND	TYPE: REFLECTIVE COLOR: YELLOW
LEGEND/BORDER	TYPE: NON-REFLECTIVE COLOR: BLACK

COORDINATES ARE TO LOWER LEFT CORNERS

Y FONT	LETTER POSITIONS (X)								HT LEN
15 1/2 D	M	E	T	E	R	I	N	G	3 1/2 20
9 3/4 D	W	H	E	N					3 1/2 11
4 D	F	L	A	S	H	I	N	G	3 1/2 20 1/4

A METERING WHEN FLASHING
AT 3 SIGN DETAIL



WIDTH x HEIGHT	24" x 18"
EDGE TO BORDER	3/8"
BORDER WIDTH	5/8"
CORNER RADIUS	2"
MOUNTING	GROUND
BACKGROUND	TYPE: REFLECTIVE COLOR: WHITE
LEGEND/BORDER	TYPE: NON-REFLECTIVE COLOR: BLACK

COORDINATES ARE TO LOWER LEFT CORNERS

Y FONT	LETTER POSITIONS (X)								HT LEN
10 1/4 C	V	E	H	I	C	L	E		3 1/2 14 1/4
9 C	I								6 1 1/4
3 C	P	E	R	G	R	E	E	N	3 1/2 20 1/2

C 1 VEHICLE PER GREEN
AT 3 SIGN DETAIL

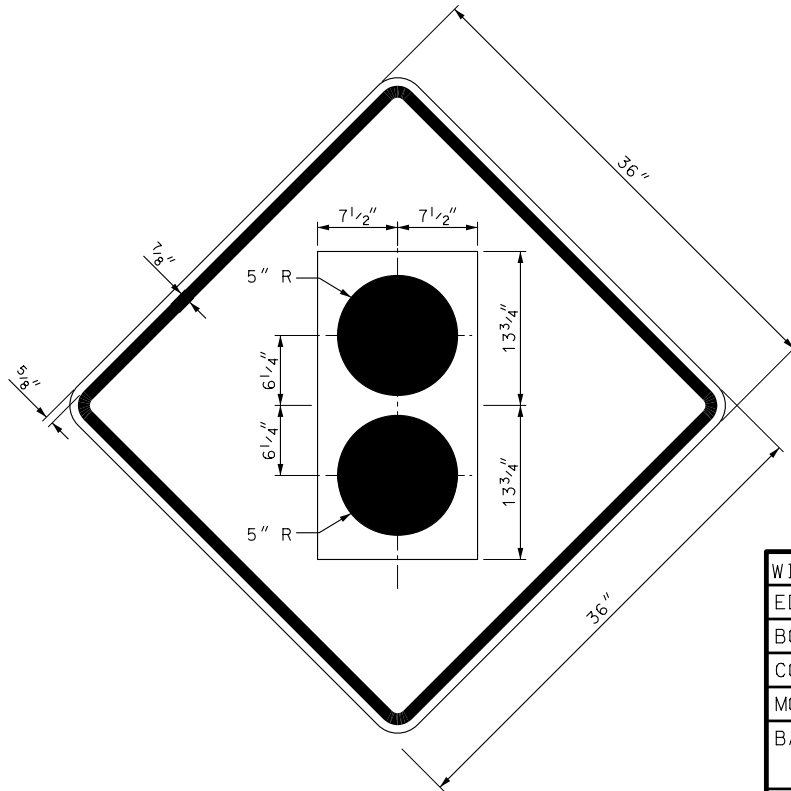


WIDTH x HEIGHT	60" x 36"
EDGE TO BORDER	3/8"
BORDER WIDTH	5/8"
CORNER RADIUS	2"
MOUNTING	GROUND
BACKGROUND	TYPE: REFLECTIVE COLOR: WHITE
LEGEND/BORDER	TYPE: NON-REFLECTIVE COLOR: BLACK

COORDINATES ARE TO LOWER LEFT CORNERS

Y FONT	LETTER POSITIONS (X)								HT LEN
24 1/2 EM	V	E	H	I	C	L	E		6 37 1/2
23 1/2 EM	1								6 2 1/2
14 1/2 EM	P	E	R	G	R	E	E	N	6 51 1/4
4 1/2 EM	E	A	C	H	L	A	N	E	6 52

B 1 VEHICLE PER GREEN EACH LANE
AT 3 SIGN DETAIL



WIDTH x HEIGHT	36" x 36" (DIAGONAL)
EDGE TO BORDER	5/8"
BORDER WIDTH	7/8"
CORNER RADIUS	2 1/4"
MOUNTING	GROUND
BACKGROUND	TYPE: REFLECTIVE COLOR: YELLOW
LEGEND/BORDER	TYPE: NON-REFLECTIVE COLOR: BLACK
TOP CIRCLE	TYPE: REFLECTIVE COLOR: RED
BOTTOM CIRCLE	TYPE: REFLECTIVE COLOR: GREEN

D WS3-3
AT 3 RAMP METER AHEAD

UTAH DEPARTMENT OF TRANSPORTATION

STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION

RECOMMENDED FOR APPROVAL

CHAIRMAN STANDARDS COMMITTEE

APPROVED

DEPUTY DIRECTOR

RAMP METER
SIGN PANEL

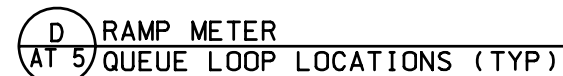
STD DWG
AT 3

REVISIONS

1 02/24/05 S.S. ENTIRE DRAWING REVISED.

REMARKS

NO. DATE APPR.



1. TAG EACH LOOP WIRE IN EACH JUNCTION BOX, BEGINNING WITH FIRST LOOP IN LANE CLOSEST TO SHOULDER.
2. USE THE CURRENT EDITION OF AASHTO ROADSIDE DESIGN GUIDE FOR CLEAR ZONE REQUIREMENTS. CLEAR ZONE MAY EXTEND INTO CUT OR FILL SLOPES.
3. USE PREFORMED LOOPS IN NEW ASPHALT PAVEMENT.
4. USE SEPARATE CONDUCTOR HOME RUN TO CABINET FOR ALL LOOPS.
5. PLACE RAMP METER MAST ARM ASSEMBLY 1.2 TIMES THE AASHTO CLEAR ZONE DISTANCE AWAY FROM THE TRAVEL WAY, OR SHIELD AS PER THE CURRENT EDITION OF THE AASHTO ROADSIDE DESIGN GUIDE.

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UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION

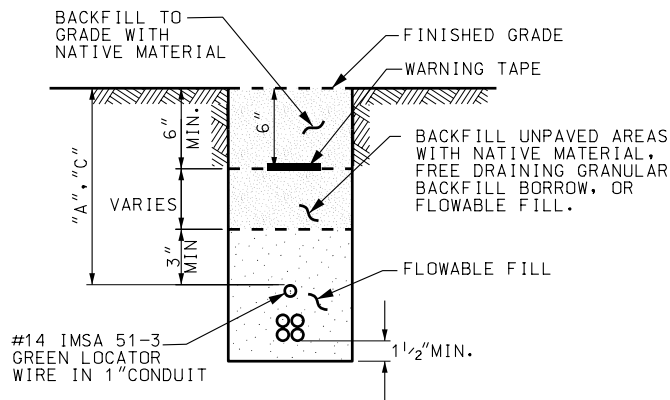
RAMP METER LOOP INSTALLATION

STD DWG
AT 5

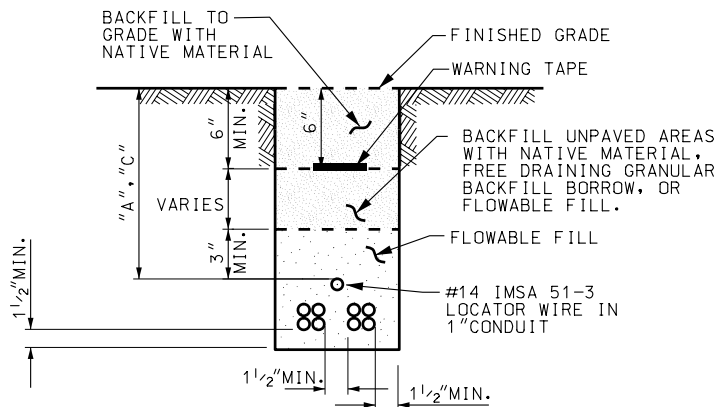
CHAIRMAN, STANDARDS COMMITTEE	DATE	FEB. 24, 2005
APPROVED	DATE	FEB. 24, 2005
DEPUTY DIRECTOR	DATE	

STANDARD DRAWING TITLE

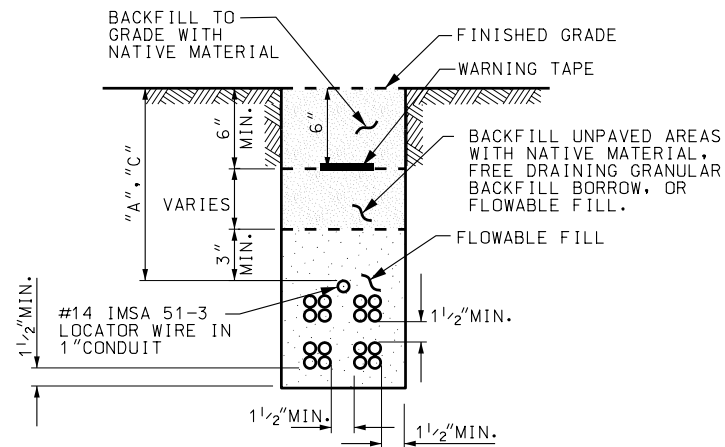
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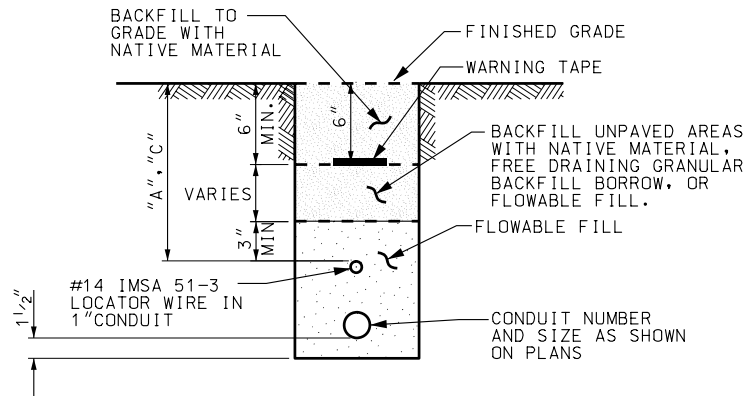
A
AT 6 1-D MULTIDUCT CONDUIT



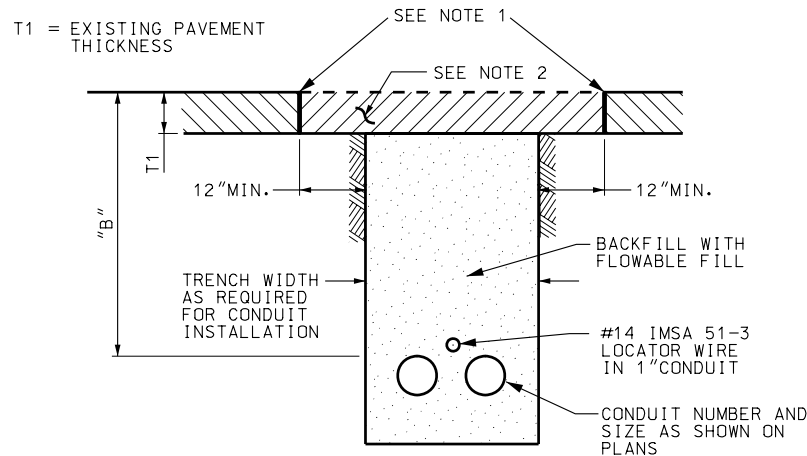
B
AT 6 2-D MULTIDUCT CONDUIT



C
AT 6 4-D MULTIDUCT CONDUIT



D
AT 6 NON-MULTIDUCT CONDUIT



E
AT 6 CONDUIT TRENCHED IN ASPHALT PAVEMENT RESTORED WITH T PATCH

TABLE 1. T PATCH RESTORATION

EXISTING ASPHALT PAVEMENT THICKNESS (T1) IN INCHES	RESTORATION T PATCH THICKNESS IN INCHES
0 - 3 1/2	3 1/2
3 1/2 - 7	MATCH EXISTING DEPTH
7 OR GREATER	7

TABLE 2. MINIMUM CONDUIT DEPTH

	DEPTH IN INCHES	AREA
A	36	OUTSIDE 20 FT OF PAVEMENT EDGE
B	36	HIGHWAY RIGHT OF WAY UNDER ASPHALT PAVEMENT SURFACE
C	60	WITHIN 20 FT OF PAVEMENT EDGE

NOTES:

1. SAW CUT PAVEMENT EDGES. APPLY A HOT-POUR RUBBERIZED ASPHALT JOINT SEALANT OR APPROVED EQUAL, APPLIED AFTER PATCH IS INSTALLED.
2. USE HMA MATERIAL FOR T-PATCH. USE OPEN GRADED SEAL COAT IS REQUIRED FOR PATCHES GREATER THAN 12 FEET WIDE, AND WHERE OPEN GRADED SEAL COAT EXISTS.

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION

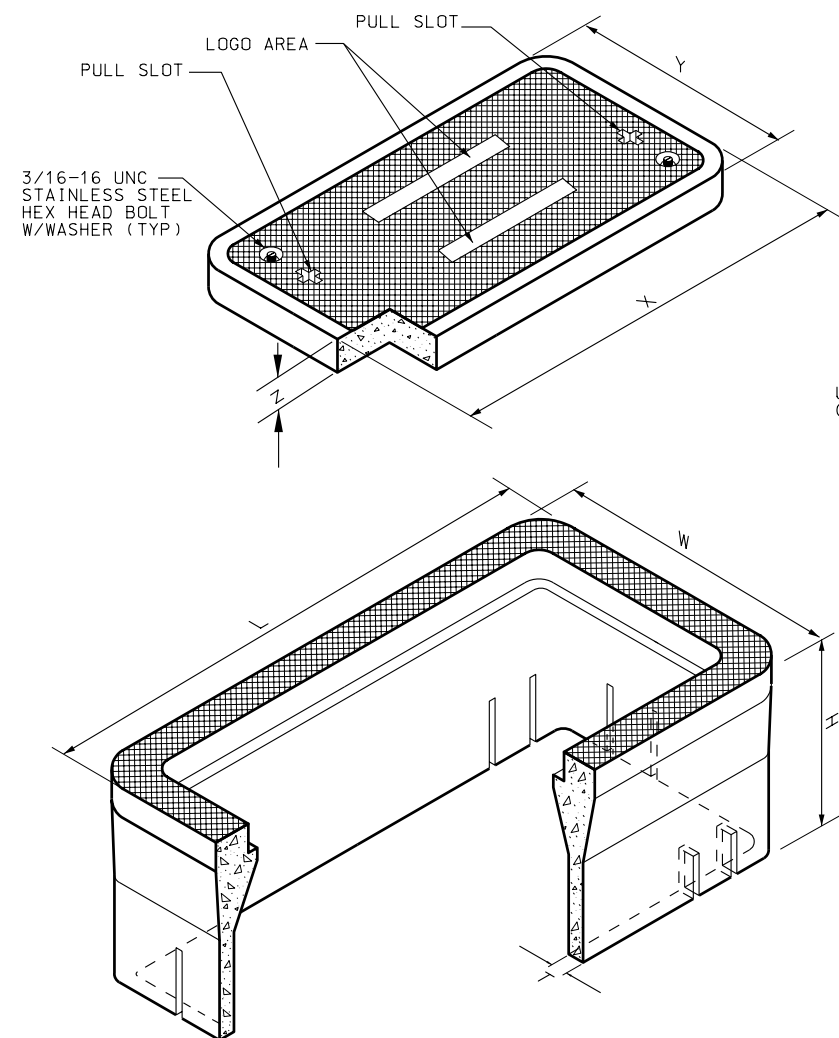
CONDUIT DETAILS

REVISIONS	NO.	DATE	APPR.	REMARKS
1	2/24/05	S.S.		REVISED MULTI-DUCT CONFIG AND T-PATCH REQUIREMENTS.

RECOMMENDED FOR APPROVAL
SALESMAN
CHAIRMAN STANDARDS COMMITTEE
APPROVED
DEPUTY DIRECTOR
FEB. 24, 2005
FEB. 24, 2005

STD DWG
AT 6

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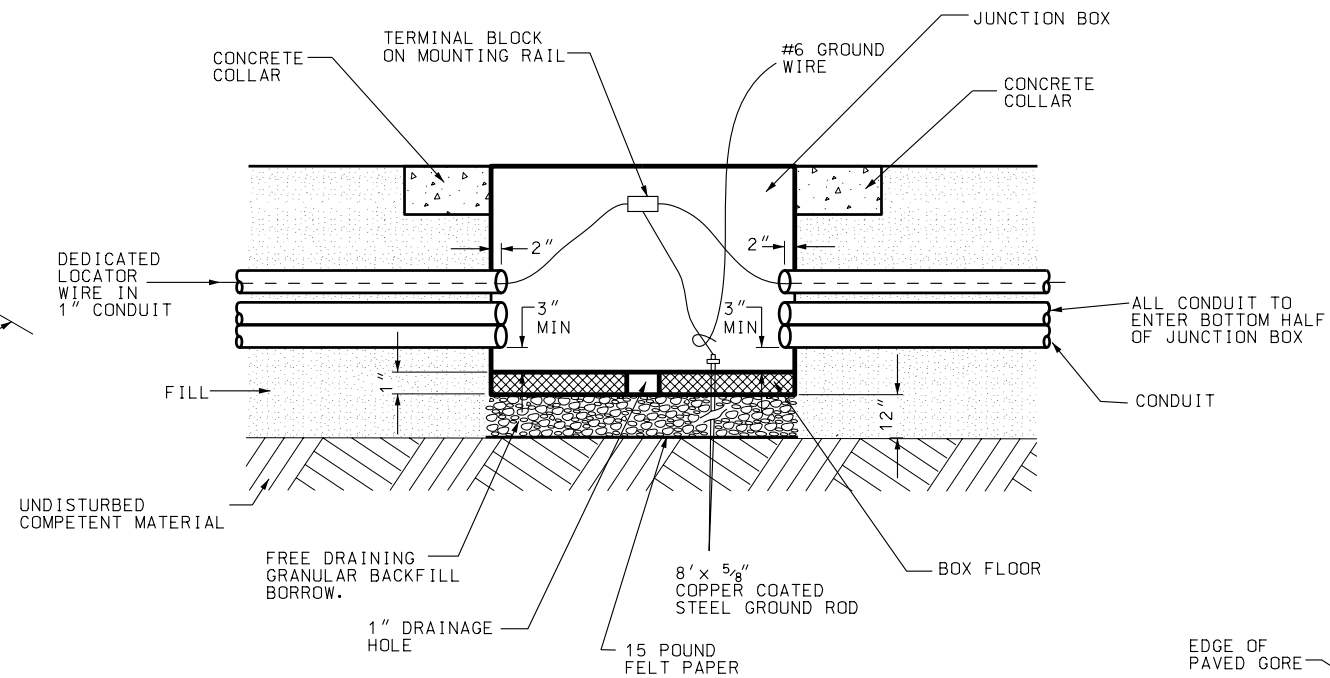


BOX AND LID DIMENSIONS

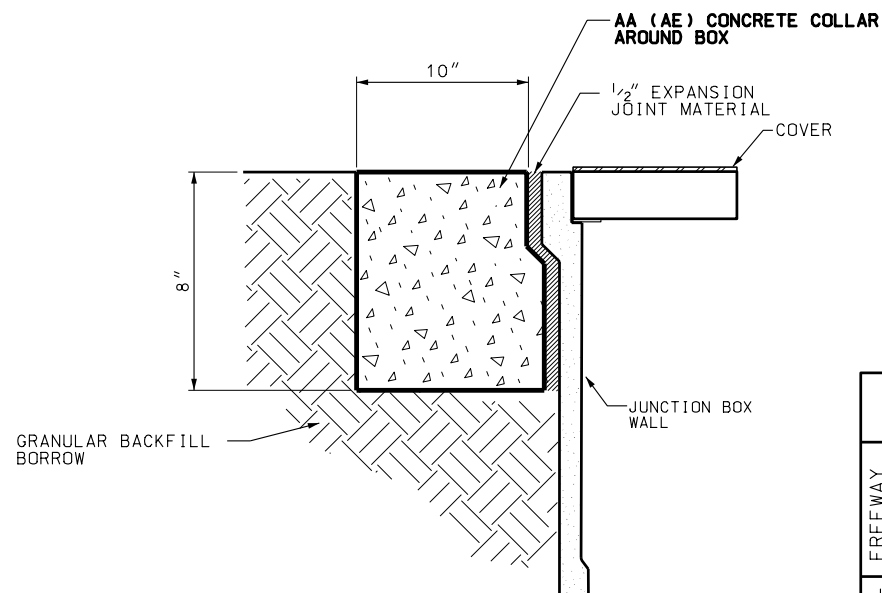
BOX TYPE	"L" inch	"W" inch	"H" inch	"T" inch	"X" inch	"Y" inch	"Z" inch
I-PC	25	16	24	1 1/2	23 1/4	13 3/4	2
II-PC	37 5/8	26	24	1 1/2	35 5/8	24	3
III-PC	49 5/8	32 1/8	24	2	47 5/8	30 1/8	3

NOTES:

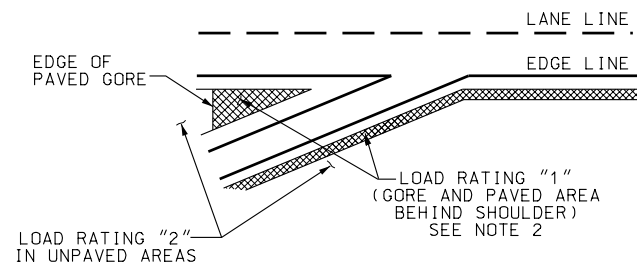
1. STAMP BOX LOGO INTO THE LID FROM THE FACTORY. (SEE SECTION 13554).
2. DO NOT PLACE JUNCTION BOXES IN THE TRAVELED-WAY OR ON FREEWAY SHOULDERS.
3. CONCRETE COLLAR WIDTH VARIES WHEN ADJACENT TO ATMS CABINETS. SEE STD. DWG. AT 8.
4. PROVIDE CONCRETE COLLARS IN ALL LOCATIONS EXCEPT WITHIN PAVED AREAS.
5. INSTALL CORRECTLY SIZED CONDUIT PLUG IN EACH CONDUIT ENTERING THE JUNCTION BOX.



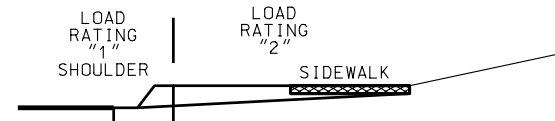
JUNCTION BOX CONDUIT PENETRATION DETAIL



JUNCTION BOX CONCRETE COLLAR DETAIL



FREEWAY APPLICATION



ARTERIAL STREET APPLICATION

TABLE 1. FREEWAY AND ARTERIAL STREET APPLICATIONS

	APPLICATION	LOAD RATING	
		1	2
FREEWAY	INCIDENTAL TRAFFIC: PAVED GORE, PAVED AREA BEHIND SHOULDER	X	
	ALL OTHER AREAS		X
ARTERIAL	PAVED SHOULDER OUT OF TRAFFIC	X	
	NON-RAISED MEDIAN, INDUSTRIAL/COMMERCIAL DRIVEWAYS	X	
	PARKWAY/SIDEWALK, BEHIND SIDEWALK		X

TABLE 2. JUNCTION BOX LID STATIC VERTICAL LOAD RATING

LOAD RATING	MINIMUM DESIGN LOAD (lb)	MINIMUM TEST LOAD (lb)	TEST AREA (inch)
1	16,000	33,500	10 x 20
2	8,000	22,500	10 x 20

UTAH DEPARTMENT OF TRANSPORTATION

STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION

POLYMER-CONCRETE
JUNCTION BOX
DETAILS

STD DWG
AT 7

REVISIONS

1. 12/24/05 S.S. REMOVED LOAD 3 RATING BOXES AND REVISED DESIGN & TEST LOAD RATINGS.

DATE

FEB.24.2005

CHAIRMAN STANDARDS COMMITTEE

DATE

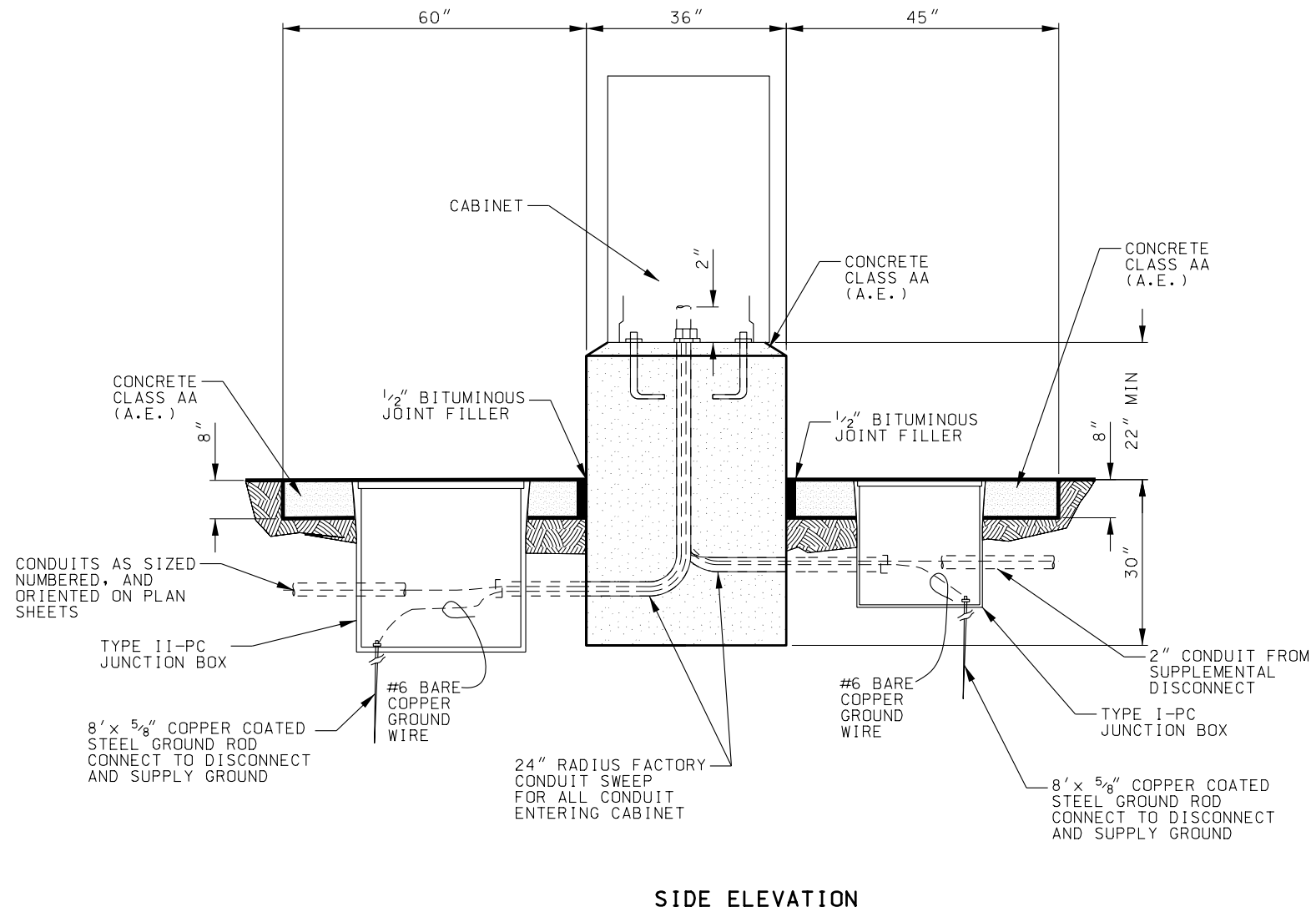
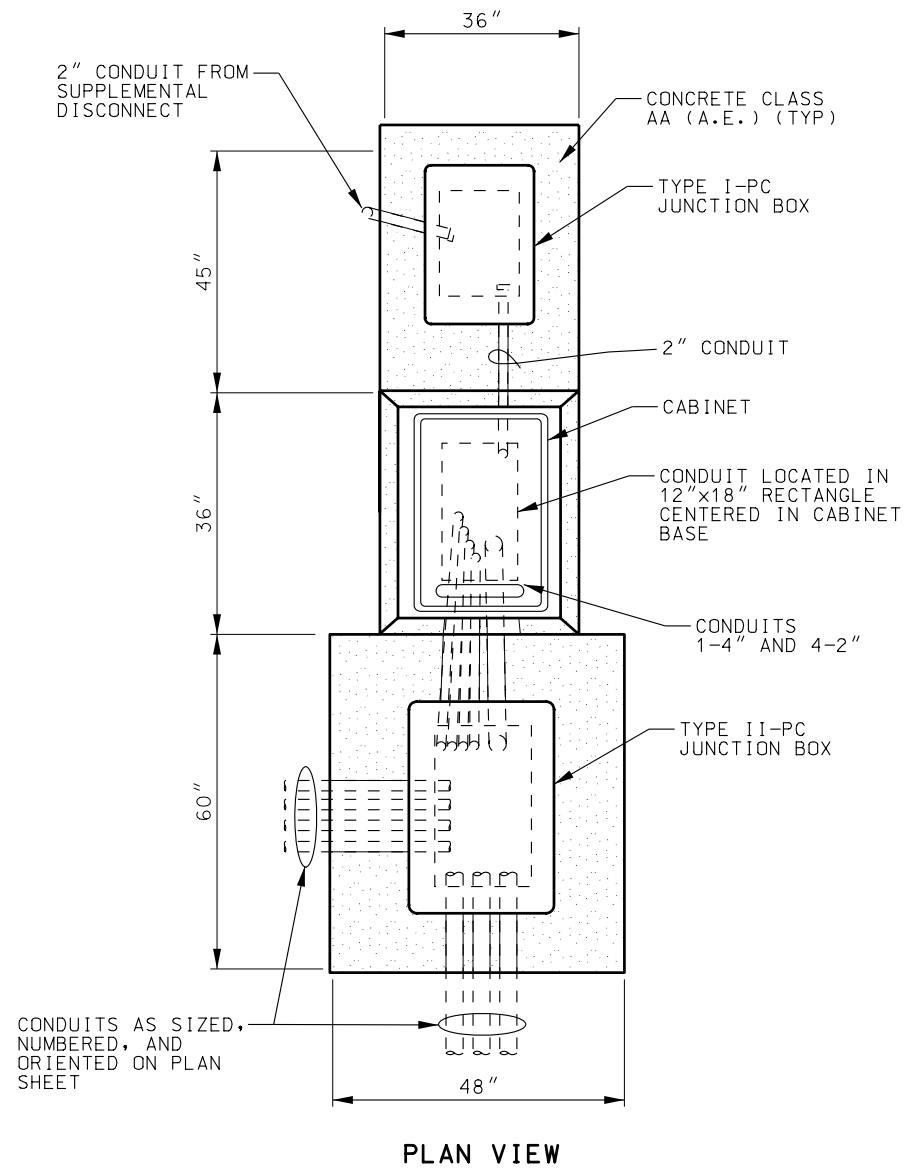
FEB.24.2005

DEPUTY DIRECTOR

STANDARD DRAWING TITLE

REMARKS

14-MAR-2005 DGN: F:\et\N\et\Standard Drawings\Imperial\2005\Approved\Cheng\Approved\at08.dgn



A
AT 8

ATMS CABINET

NOTE:

1. SEE STD DWG AT 9 FOR CABINET DISCONNECT AND TRANSFORMER DETAIL.

REVISIONS
1 02/24/05 S.S. ENTIRE DRAWING REVISED, TITLE CHANGED.

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE COUNTY

RECOMMENDED FOR APPROVAL
CHAIRMAN STANDARDS COMMITTEE
APPROVED
DATE
FEB. 24, 2005
DEPUTY DIRECTOR
DATE
FEB. 24, 2005

ATMS CABINET

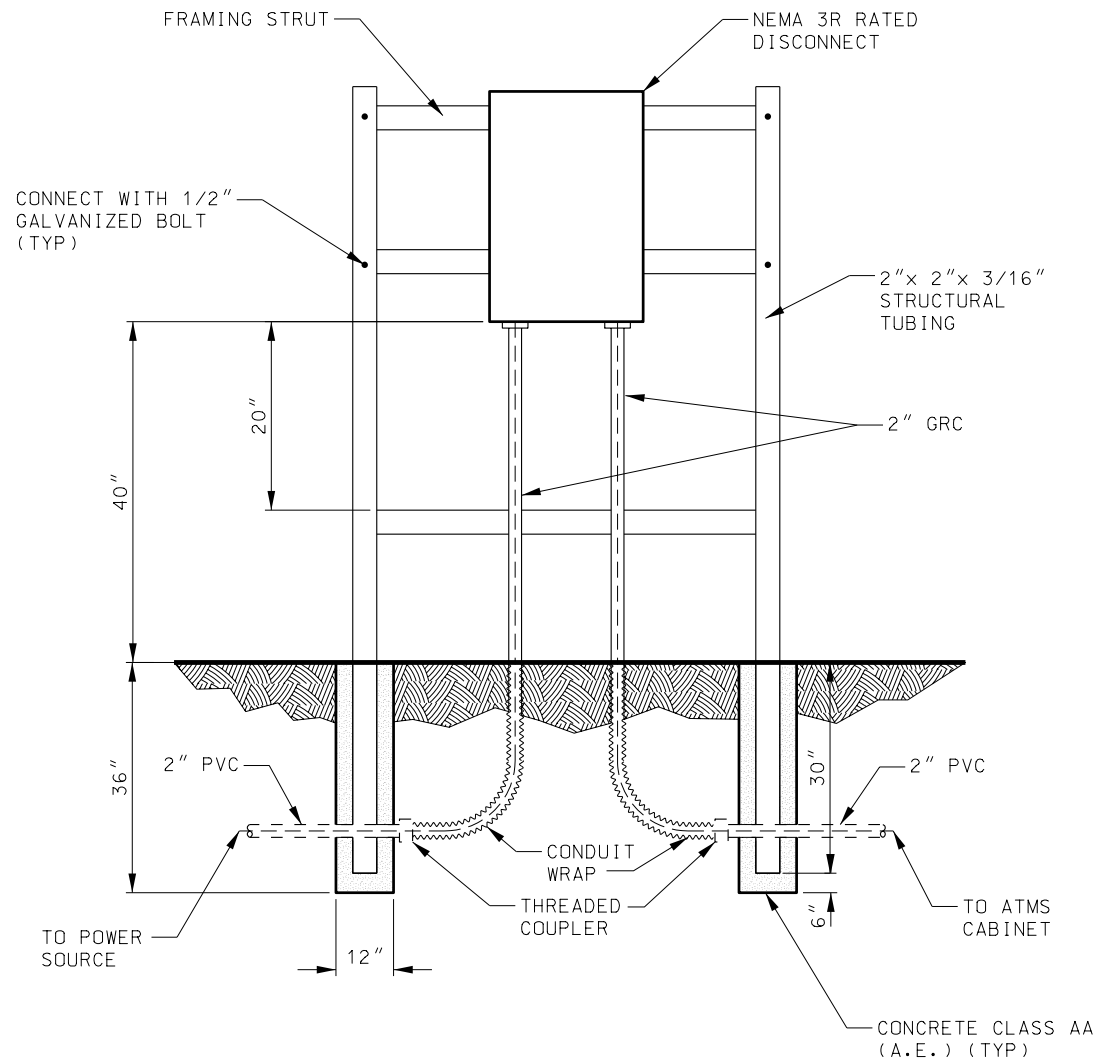
STD DWG
AT 8

STANDARD DRAWING TITLE

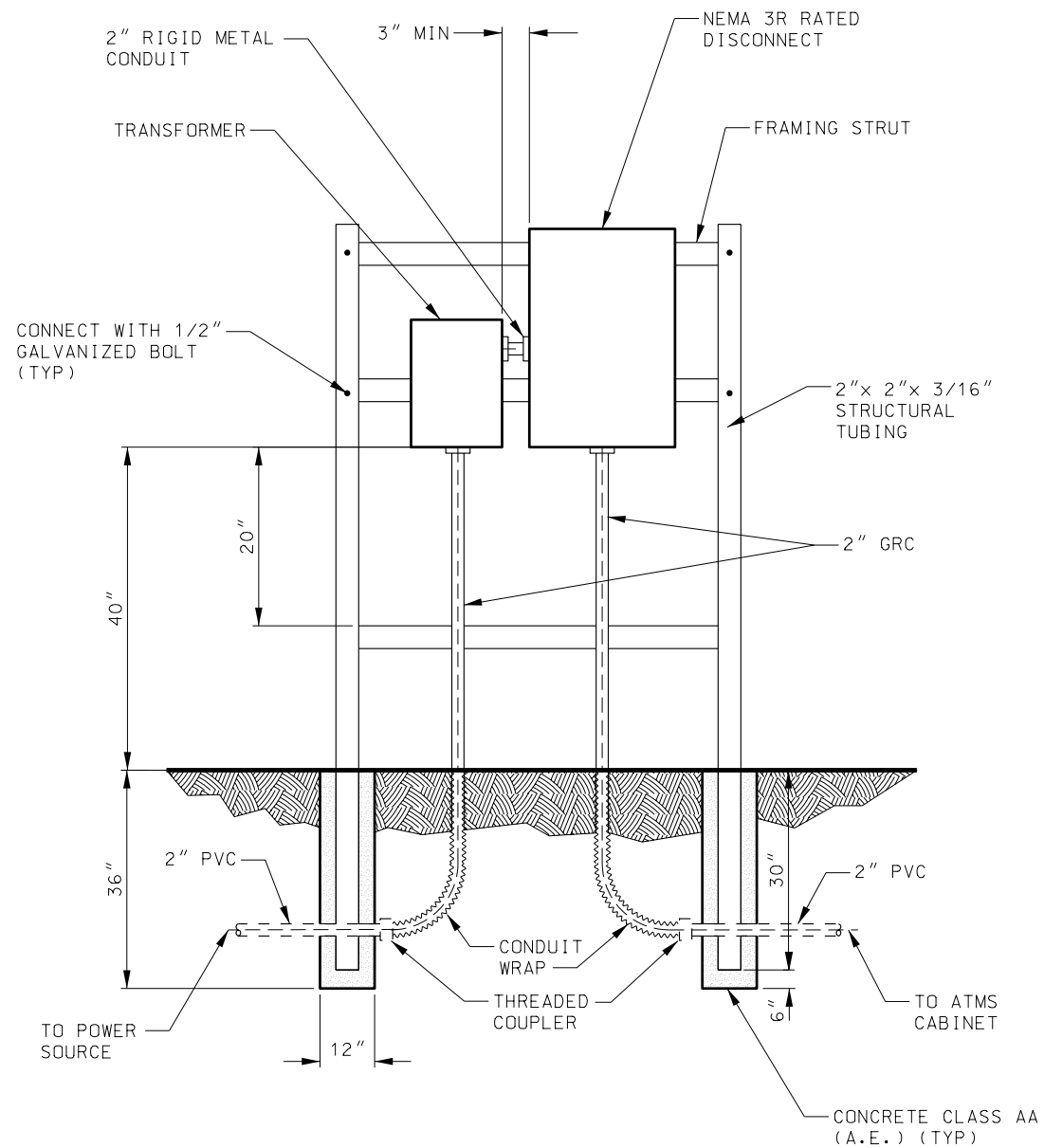
REMARKS

NO. DATE APPR.

14-MAR-2005 DGN File: N:\Ead\Standard Drawings\Imperial\2005\Approved\Change\Approved\at9.dgn



A
AT 9 SUPPLEMENTAL DISCONNECT FRAME



B
AT 9 SUPPLEMENTAL DISCONNECT WITH TRANSFORMER FRAME

NOTE:

1. FRAME SHOULD BE LOCATED BETWEEN 10 TO 15 FEET FROM CABINET.

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

ATMS CABINET
DISCONNECT AND
TRANSFORMER FRAME

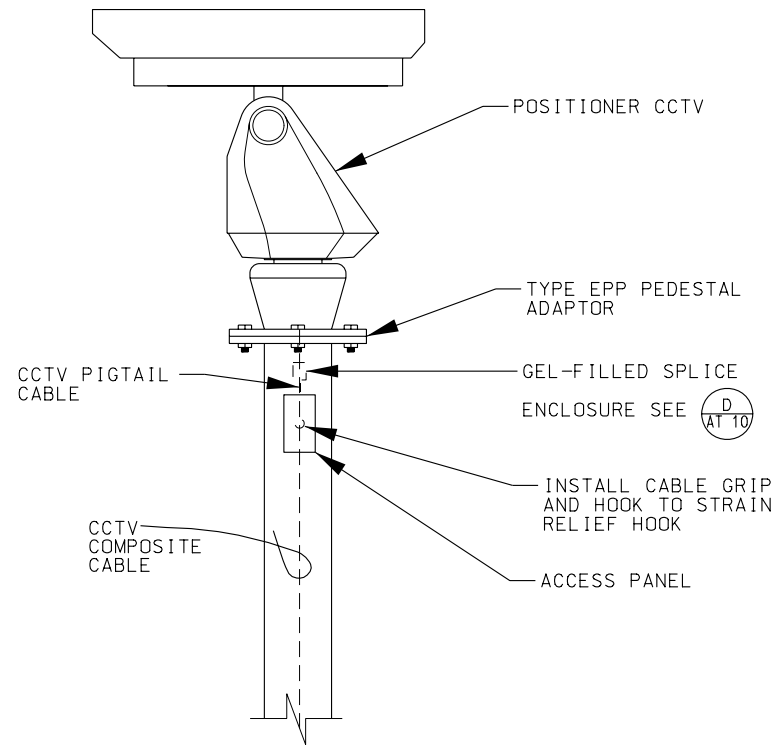
STD DWG
AT 9

RECOMMENDED FOR APPROVAL
CHAIRMAN STANDARDS COMMITTEE
APPROVED
FEB.24.2005
DATE
DEPUTY DIRECTOR

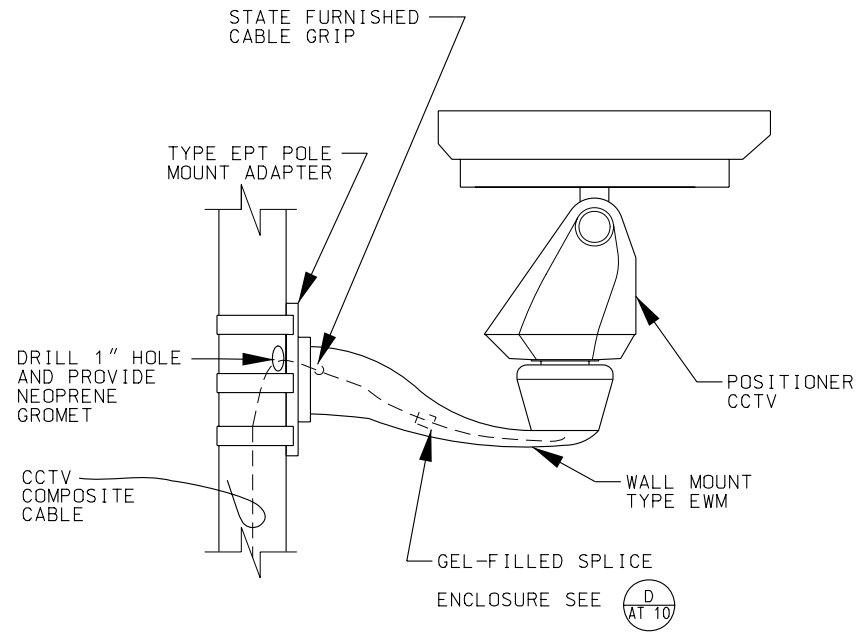
REVISIONS
1 12/24/05 S.S. DRAWING REPLACED, TITLE CHANGED.

NO. DATE APPR. REMARKS

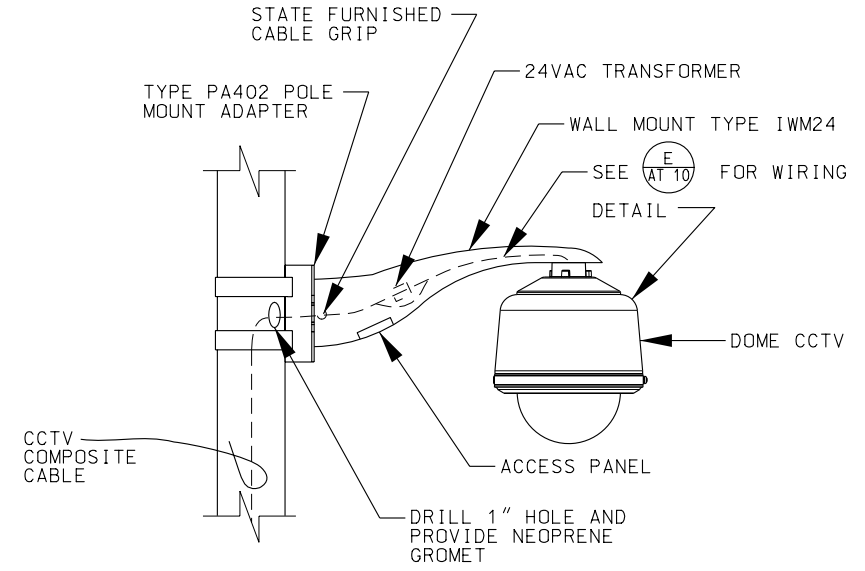
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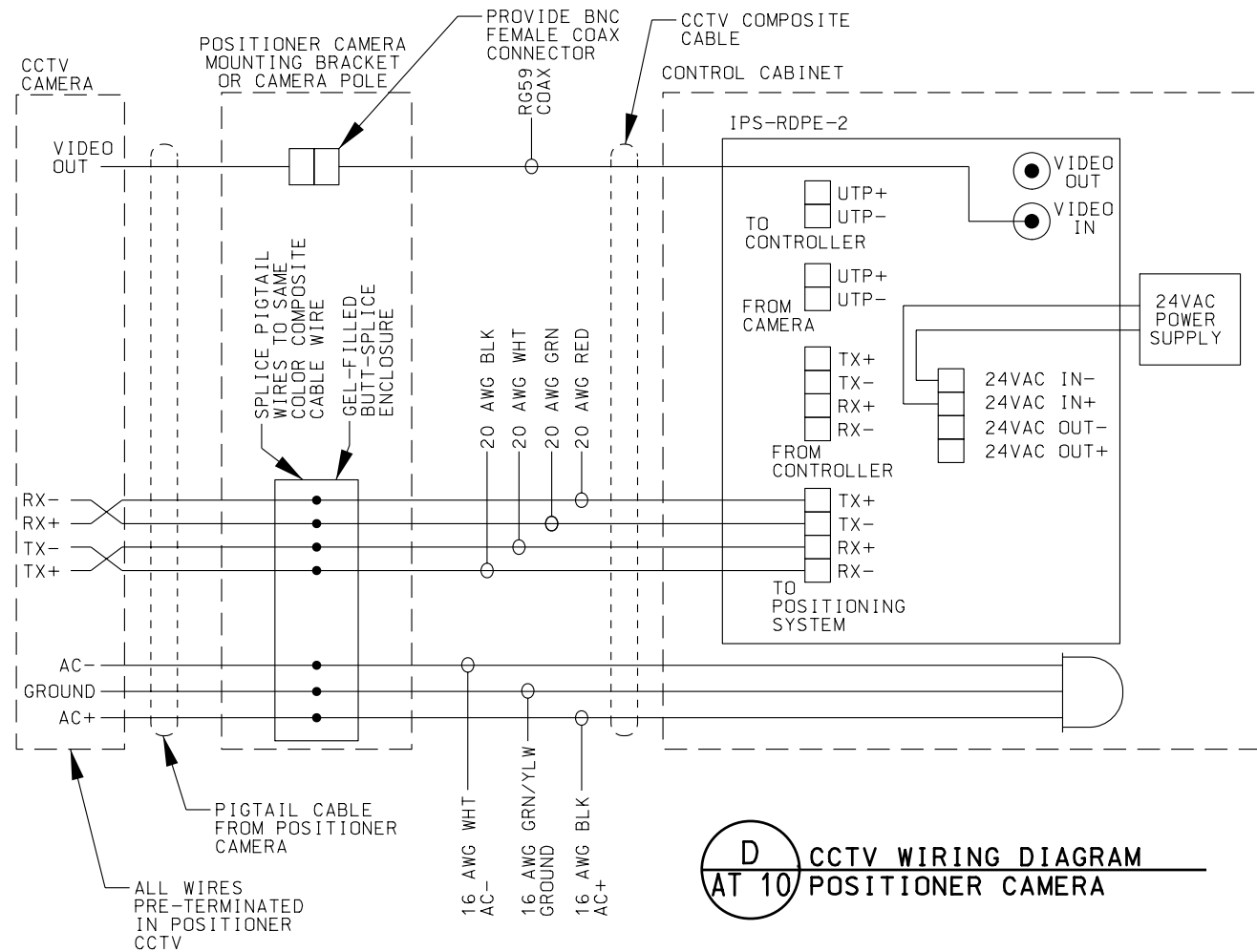
A CCTV MOUNTING DETAIL
AT 10 PEDESTAL MOUNTED POSITIONER CCTV



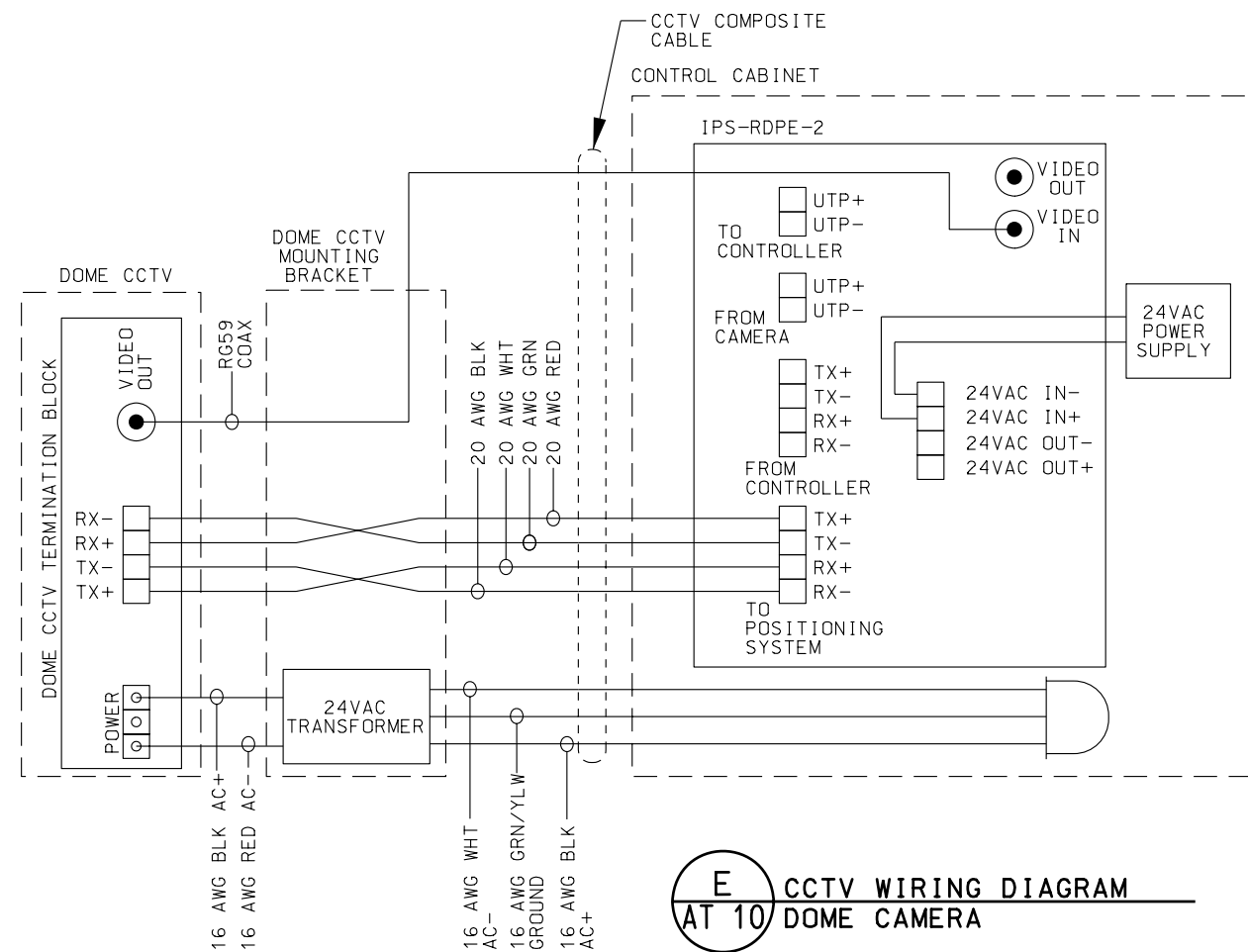
B CCTV MOUNTING DETAIL
AT 10 POLE MOUNTED POSITIONER CCTV



C CCTV MOUNTING DETAIL
AT 10 POLE MOUNTED DOME CCTV



D CCTV WIRING DIAGRAM
AT 10 POSITIONER CAMERA



E CCTV WIRING DIAGRAM
AT 10 DOME CAMERA

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION

CCTV MOUNTING
DETAILS

STD DWG
AT 10

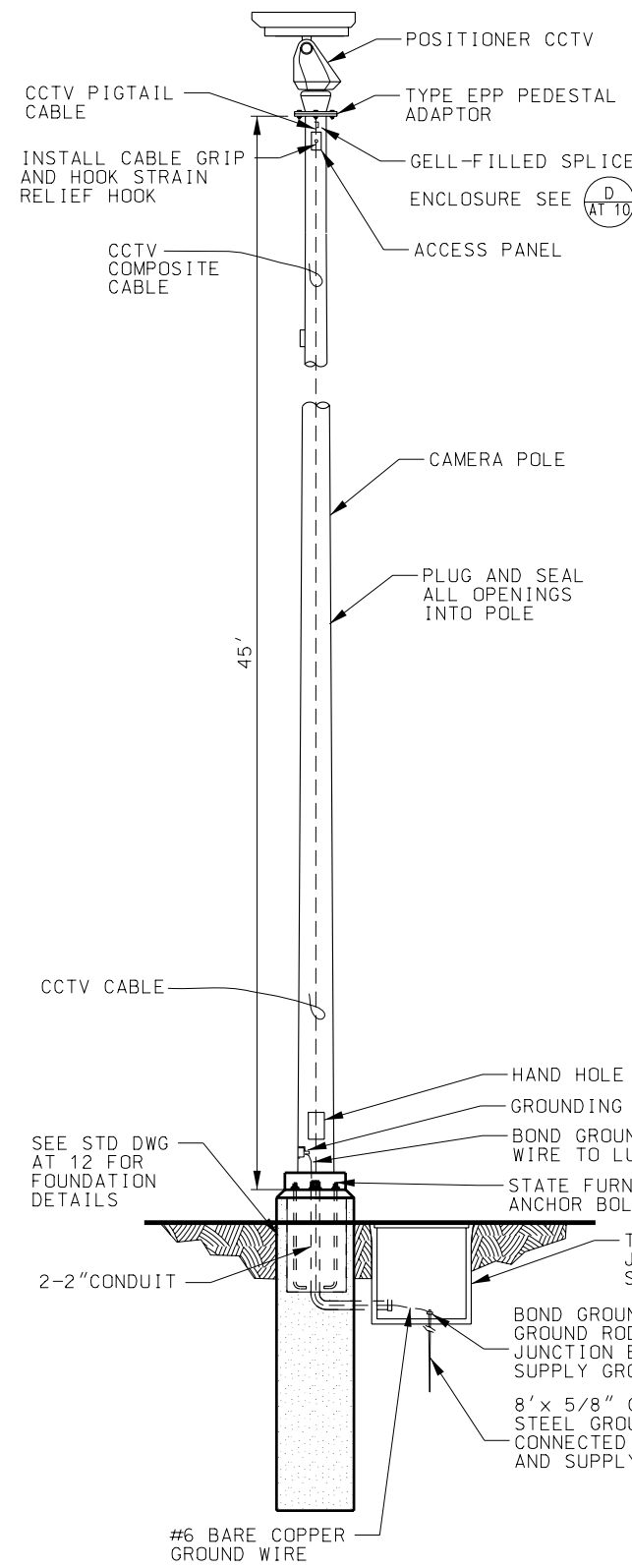
REVISIONS
1 12/24/05 S.S. REVISED CAMERA MOUNTING AND ADDED WIRING.
TITLE CHANGED.

RECOMMENDED FOR APPROVAL
CHAIRMAN STANDARDS COMMITTEE
APPROVED
DEPUTY DIRECTOR
FEB.24.2005
DATE
FEB.24.2005
DATE

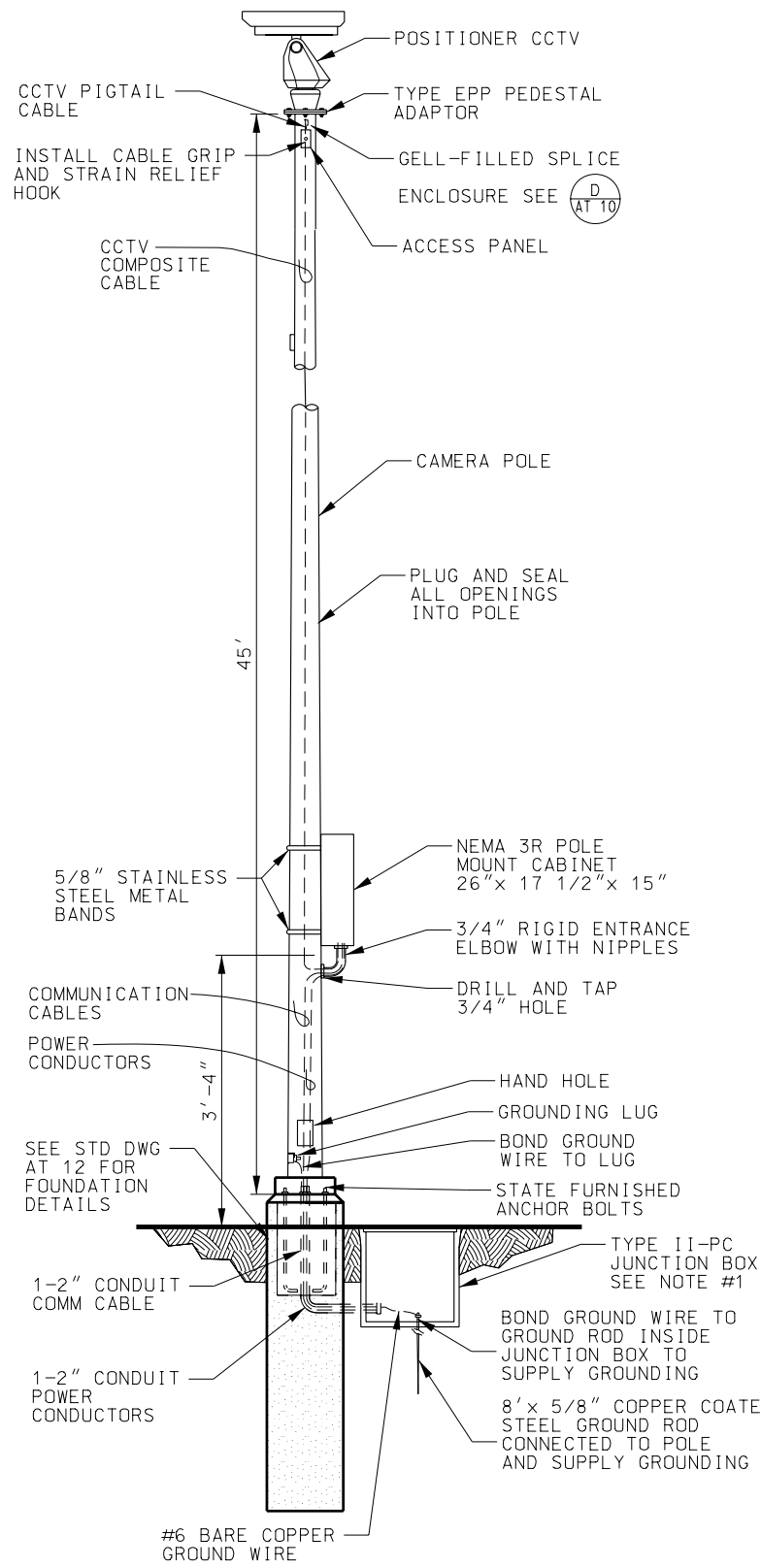
STANDARD DRAWING TITLE

REMARKS

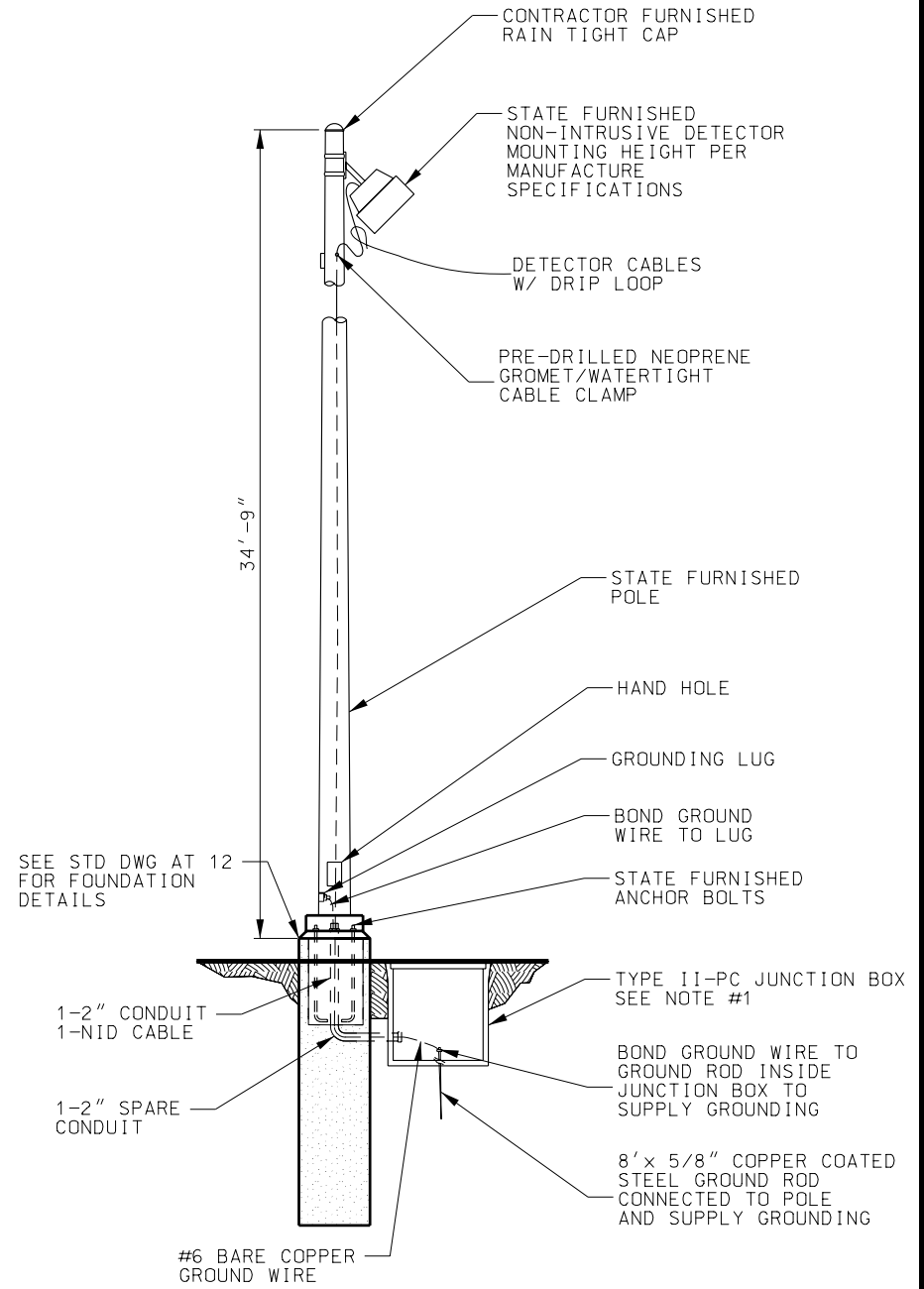
14-MAR-2005 D:\Net\N\Std\Standard Drawings\Imperial\2005\Approved\XCheng\Approved\at11.dgn



A FREEWAY CCTV POLE DETAIL
AT 11



B FREEWAY CCTV POLE DETAIL
AT 11 WITH POLE MOUNT CABINET

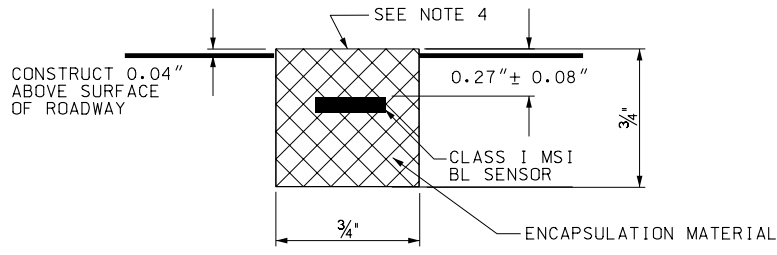


C LUMINAIRE POLE WITH NID
AT 11

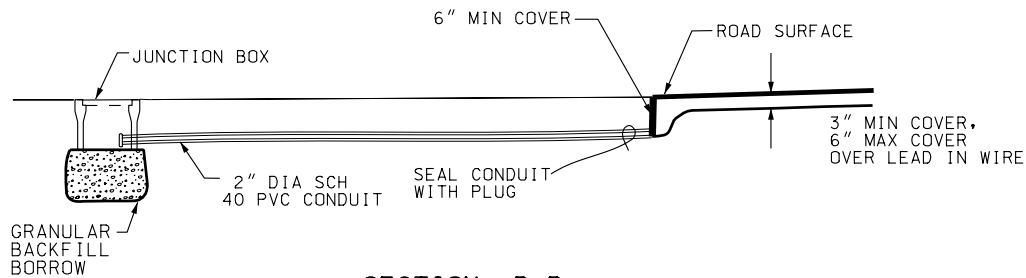
NOTE:
1. JUNCTION BOX REQUIRED UNLESS POLE IS WITHIN 20' OF CONTROL CABINET.
2. REFER TO AT 10 FOR MOUNTING DETAILS.

REVISIONS					REMARKS		
1	2/24/05	S.S.	ENTIRE DRAWING REVISED.		NO.	DATE	APPR.
UTAH DEPARTMENT OF TRANSPORTATION					STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION		
RECOMMENDED FOR APPROVAL					DATE		
CHAIRMAN STANDARDS COMMITTEE					DATE		
APPROVED					DATE		
DEPUTY DIRECTOR					DATE		
CCTV POLE DETAILS					STANDARD DRAWING TITLE		
STD DWG					AT 11		

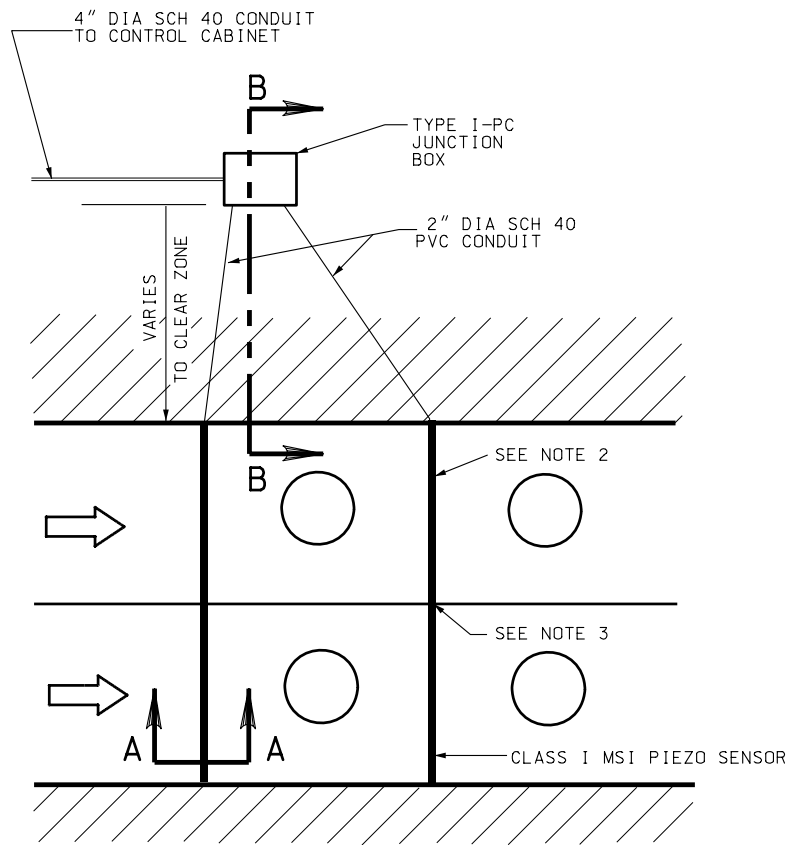
D:\14-MAR-2005\14-MAR-2005\Standard Drawings\Imperial\2005\Approved\Change\Approved\at14.dgn



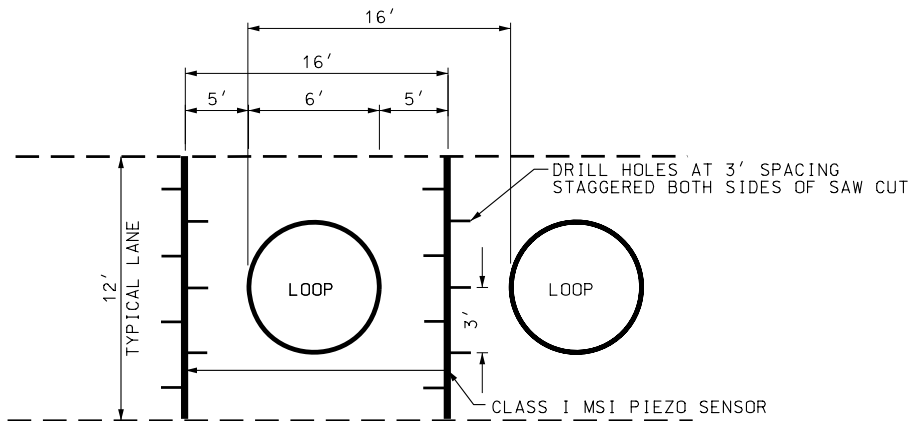
SECTION A-A



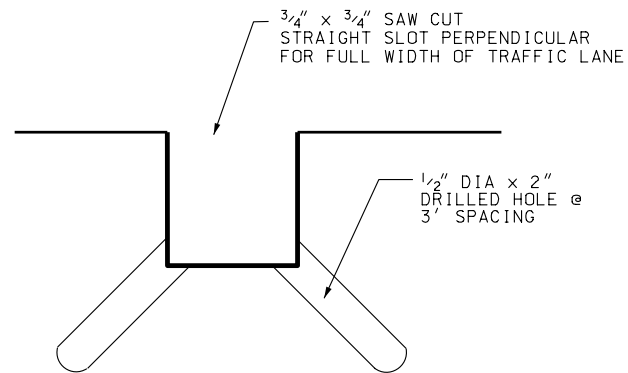
SECTION B-B



A
AT 14
DETECTOR AND PIEZO LAYOUT



B
AT 14
TYPICAL PIEZO DETAIL
PLAN VIEW



C
AT 14
TYPICAL PIEZO DETAIL
SIDE VIEW

NOTES:

1. REFER TO STD DWG SL 12 FOR LOOP DETECTOR DETAILS.
2. MAINTAIN 12" MIN. SPACING BETWEEN SAW CUT, AND ANY CONCRETE JOINTS.
3. USE FLEXIBLE MATERIAL CROSSING JOINTS.
4. GRIND FLUSH WITH SURFACE AFTER CURED.

UTAH DEPARTMENT OF TRANSPORTATION

STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION

SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL

CHAIRMAN STANDARDS COMMITTEE

APPROVED

DEPUTY DIRECTOR

WEIGH IN MOTION
PIEZO DETAILS

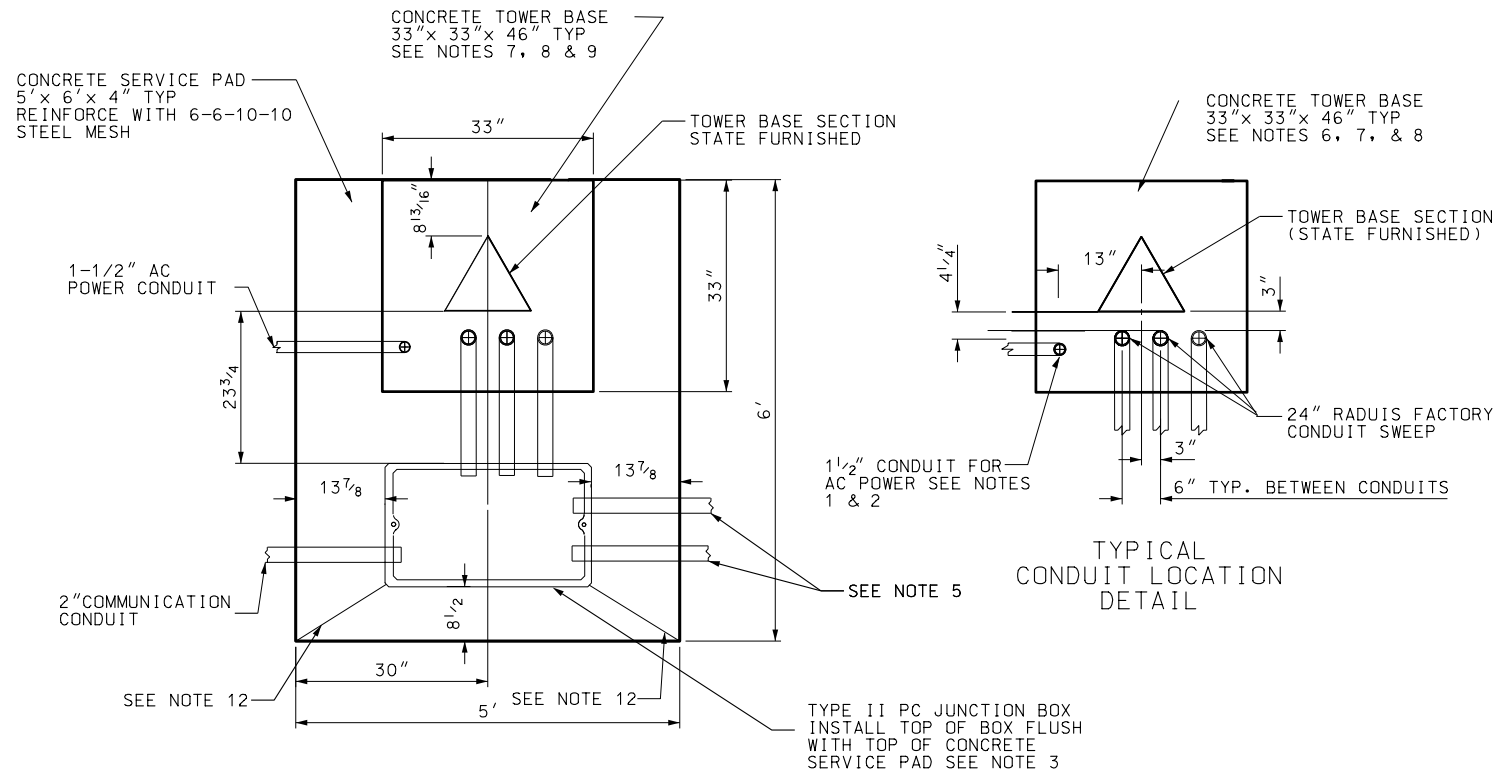
STANDARD DRAWING TITLE

STD DWG
AT 14

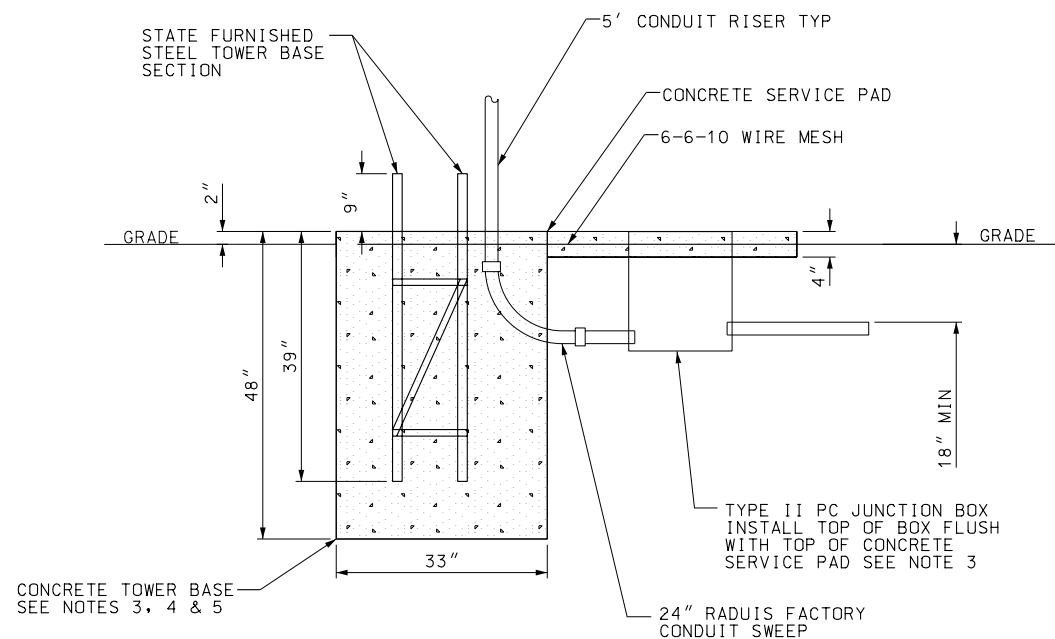
REVISIONS

1 2/24/05 S.S. REVISED NOTES.

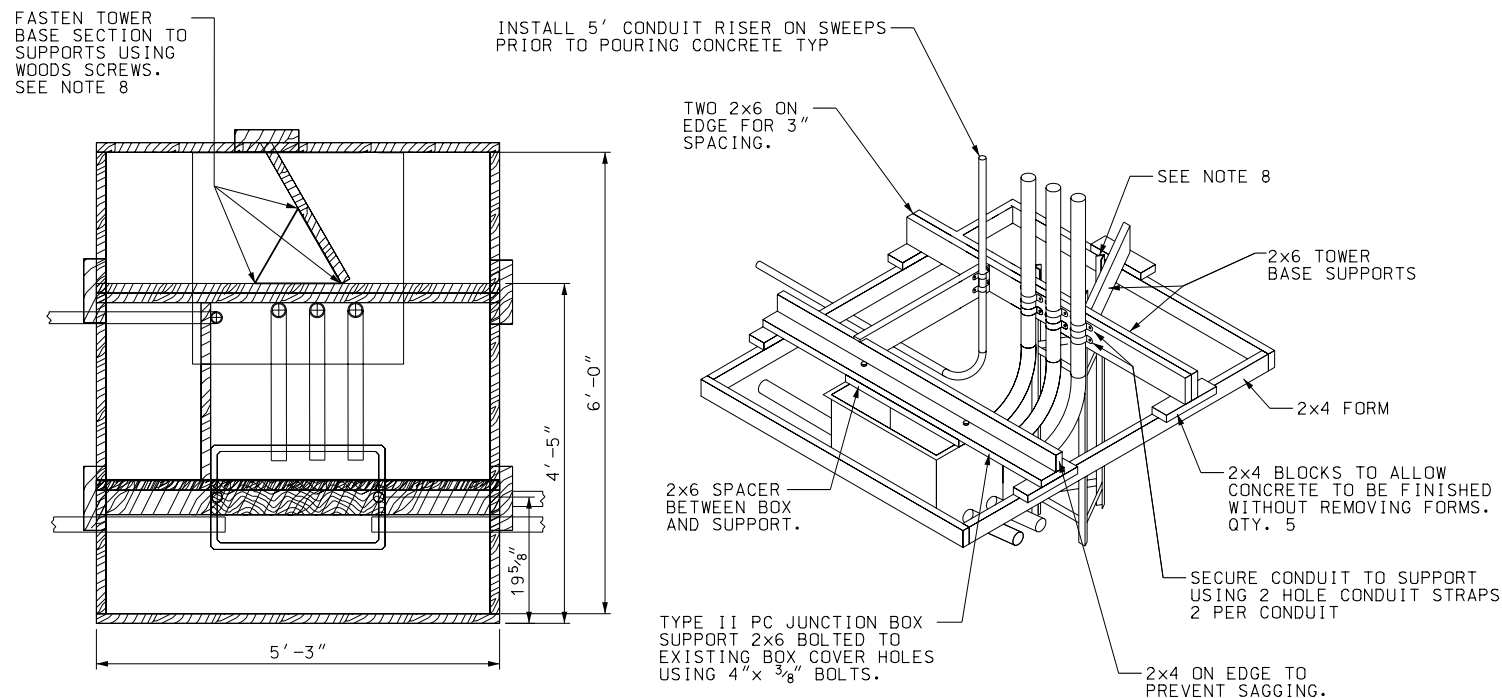
NO. DATE APPR. REMARKS



A RWIS TOWER BASE AND SERVICE
AT 16 PAD INSTALLATION DETAIL



B RWIS TOWER BASE AND SERVICE
AT 16 PAD INSTALLATION DETAIL
LEFT SIDE VIEW

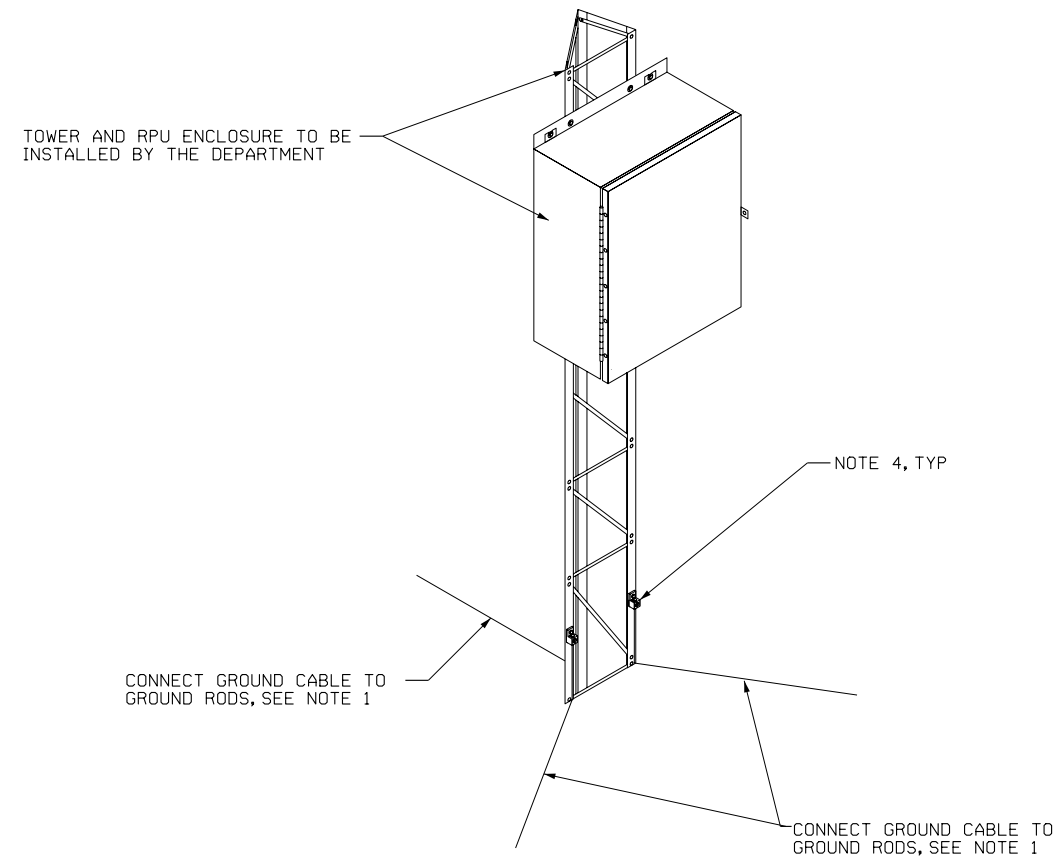


C RWIS TOWER BASE AND SERVICE
AT 16 PAD CONCRETE FORM DETAIL

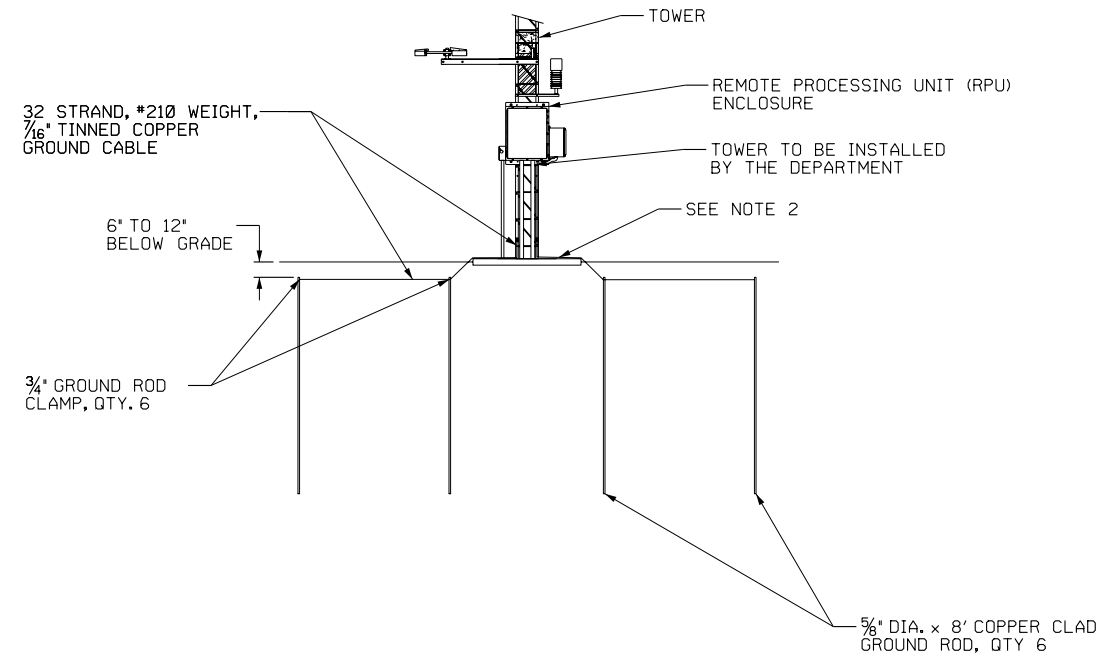
NOTES:

1. STUB OUT 1 1/2" POWER SERVICE INTO TYPE I POLYMER CONCRETE JUNCTION BOX.
2. CONDUIT LOCATIONS SHOWN ARE FOR A SQUARE D TYPE D SAFETY SWITCH, CATALOG # D221NRB.
3. INSTALL POLYMER CONCRETE JUNCTION BOXES AS PER STD DWG AT 7.
4. INSTALL ALL CONDUITS IN TOWER BASE CONCRETE TO PERMIT CONTINUATION TO RWIS ENCLOSURE.
5. STUB OUT 2" CONDUIT FROM POLYMER CONCRETE JUNCTION BOX TO BEYOND SERVICE PAD FOR SENSOR CABLES. ORIENT TOWARD NEXT JUNCTION BOX AS APPROPRIATE.
6. CONCRETE, MINIMUM CLASS AA(AE).
7. ALL SENSOR CABLES INSTALLED TO POLYMER CONCRETE JUNCTION BOX AND PULLED THROUGH 2" DIAMETER, 24" RADIUS, 90 DEGREE SWEEP FACTORY CONDUIT INTO RWIS ENCLOSURE.
8. LEVEL THE TOP OF THE TOWER BASE SECTION TO ASSURE A STRAIGHT AND PLUMB TOWER INSTALLATION. THE TOP OF THE TOWER BASE MUST BE 9" ABOVE THE CONCRETE PAD.
9. FINISH CONCRETE TO DRAIN WATER.
10. THE FORM DETAIL SHOWN IS TYPICAL FOR A FLAT SURFACE INSTALLATION. MODIFY AS APPROPRIATE FOR FIELD CONDITIONS.
11. CONTRACTOR IS RESPONSIBLE FOR INCORRECTLY INSTALLED OR DAMAGED STATE FURNISHED EQUIPMENT AND MATERIALS.
12. WHEN FINISHING CONCRETE SCORE A LINE FROM THE CORNER OF THE BOX TO THE CORNER OF THE CONCRETE FOR AN EXPANSION JOINT.

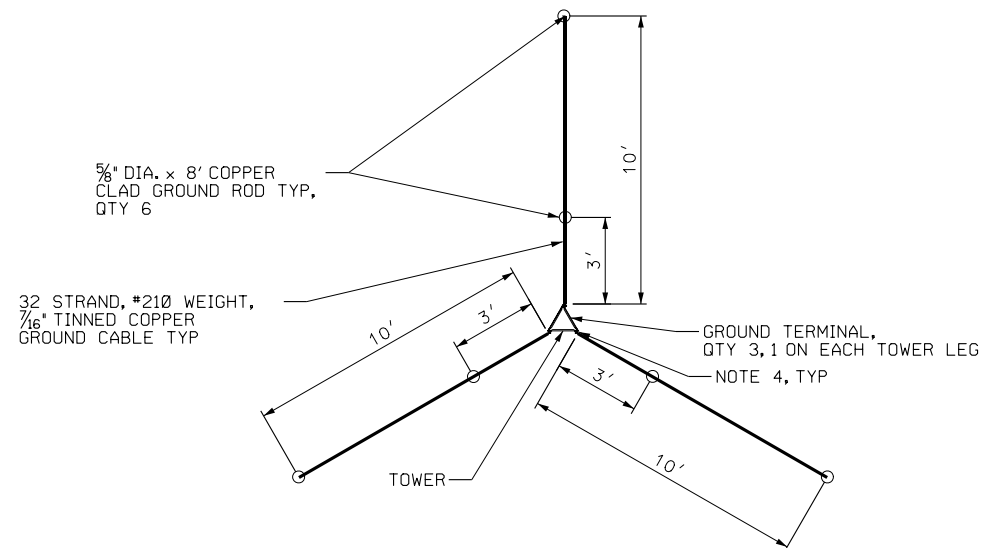
REVISIONS				REMARKS			
NO.	DATE	APPR.	REVISED NOTES AND DETAIL TITLES, TITLE CHANGED.	NO.	DATE	APPR.	REVISED NOTES AND DETAIL TITLES, TITLE CHANGED.
1	2/24/05	S.S.					
UTAH DEPARTMENT OF TRANSPORTATION				STANDARD DRAWING TITLE			
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION				RWIS TOWER BASE AND SERVICE PAD LAYOUT			
RECOMMENDED FOR APPROVAL				DATE			
CHAIRMAN STANDARDS COMMITTEE				DATE			
APPROVED				DATE			
DEPUTY DIRECTOR				DATE			
14-MAR-2005				14-MAR-2005			
DCH, E:\m\N\FedStd\Standard Drawings\Imperial\2005\Improvements\Change\Approved\at16.dgn				DCH, E:\m\N\FedStd\Standard Drawings\Imperial\2005\Improvements\Change\Approved\at16.dgn			



A GROUND CABLE TERMINATION DETAIL
AT 17



B GROUND CABLE TERMINATION DETAIL
AT 17 PROFILE VIEW



C GROUND CABLE TERMINATION DETAIL
AT 17 PLAN VIEW

NOTES:

1. PLACE GROUND CABLES ON THE TOP CONCRETE PAD.
2. ANCHOR GROUND CABLES FLAT AGAINST CONCRETE PAD WITH SUITABLE CLAMPS/ANCHORS. LEAVE EXCESS WIRE TO BE ATTACHED TO TOWER BY THE DEPARTMENT.
3. DUCT SEAL UNDERGROUND CONDUIT OPENING AFTER INSTALLING GROUND WIRE.
4. INSTALL GROUNDING WIRE AND RODS ON ALL THREE LEGS. COIL 10 FEET OF WIRE ON LEG CLOSEST TO CONDUIT. COIL 5 FEET OF GROUNDING WIRE ON OTHER LEGS.

[illegible]

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION

RECOMMENDED FOR APPROVAL

[Signature]

SAINT LAURENCE YOUTH

CHAIRMAN STANDARDS COMMITTEE

APPROVED _____
DEPUTY DIRECTOR _____

FEB. 24, 2005
DATE

GROUND ROD INSTALLATION AND TOWER GROUNDING

STANDARD DRAWING TITLE

STD DWG
AT 17

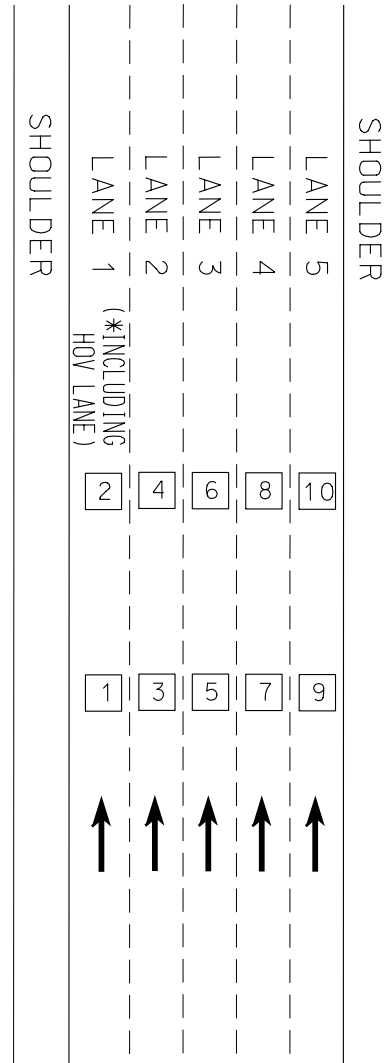
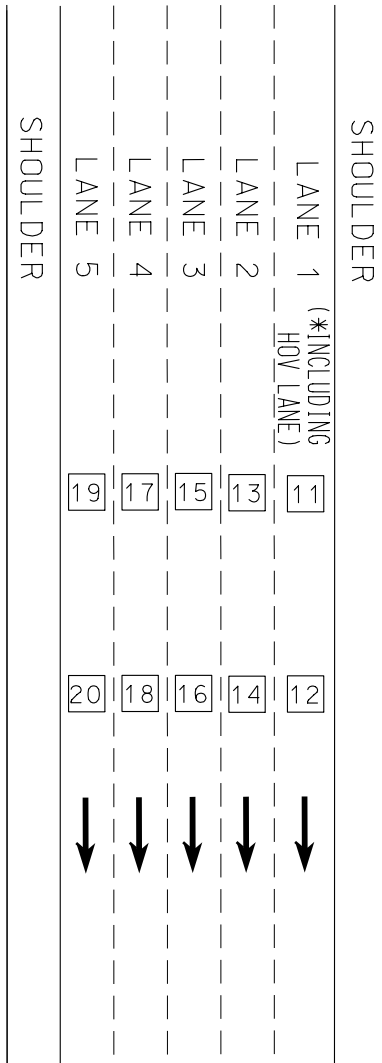
A TMS DETECTION ZONE LAYOUT (TYP)
AT 18 SOUTHBOUND OR WESTBOUND

NOTES:

1. NUMBER ADDITIONAL DETECTORS INCREMENTALLY AFTER MAINLINE DETECTORS.
2. PROVIDE DETECTION LAYOUT MAP IN EACH CABINET.
3. REFER TO STD DWG SL 12 FOR LOOP DETECTION DETAILS.

LEGEND

CABINET DETECTOR NUMBER ASSIGNMENT.

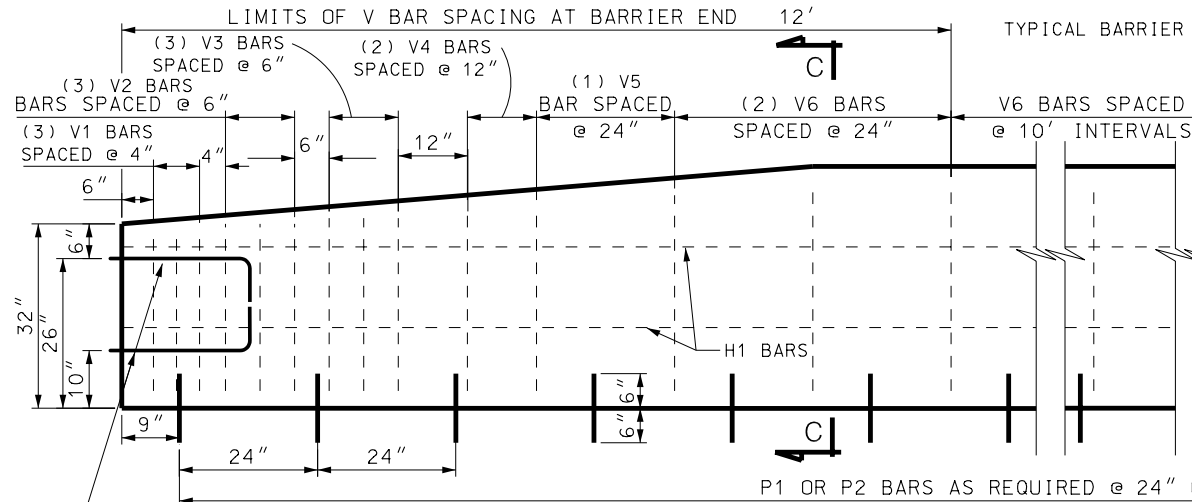


B TMS DETECTION ZONE LAYOUT (TYP) AT 18 NORTHBOUND OR EASTBOUND

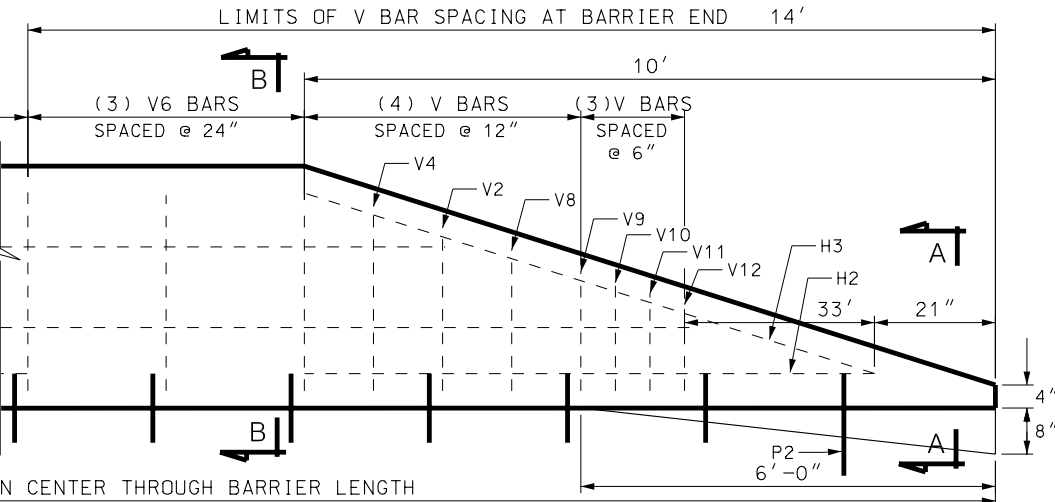
[illegible]

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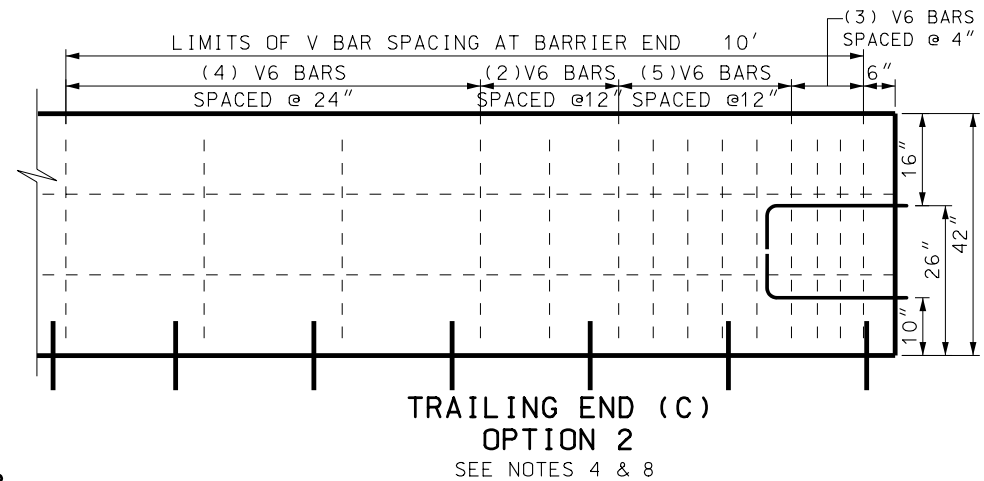
APPROACH END (A)
SEE NOTE 4



SLOPED TRAILING END (B)
OPTION 1
SEE NOTE 4



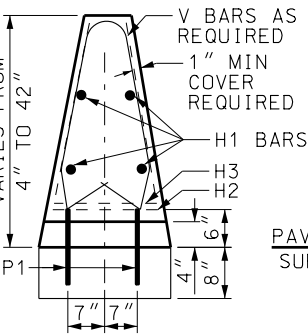
ELEVATION



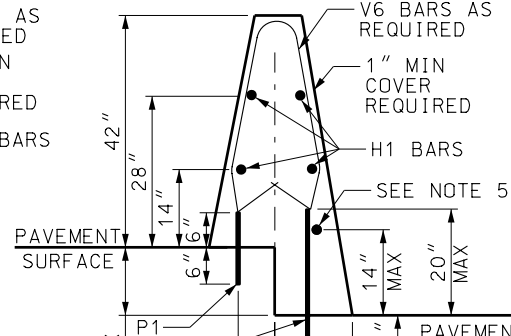
STEEL REINFORCEMENT TABLE

MARK	BAR SIZE	(NO.) OF BARS				SKETCH
H1	#5	4 OR 5 RUN THROUGH LENGTH OF BARRIER REQUIRED SPLICE LENGTH - 45"				
H2	#5	TRAILING END SECTION (B) BOTTOM SIDE				
H3	#5	TRAILING END SECTION (B) TOP SIDE				
END OPTION		(A)	(B)	(C)	D	
V1	#5	3			28"	
V2	#5	3	1		29"	
V3	#5	3			30"	
V4	#5	2	1		32"	
V5	#5	1			34"	
* V6	#5	2	3	14	36"	
V7	#5		1		25"	
V8	#5		1		22"	
V9	#5		1		20"	
V10	#5		1		18"	
V11	#5		1		16"	
P1	#8	BARRIER TO PAVEMENT				12" LONG PINS @ 24" CENTERS
P2	#8	BARRIER TO PAVEMENT STEPPED PAVEMENT				26" LONG PINS @ 24" CENTERS

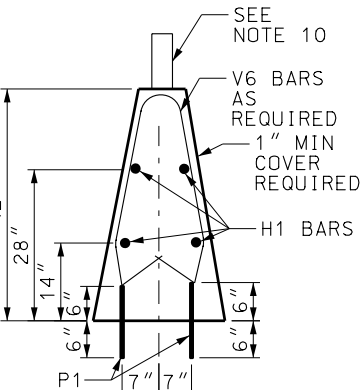
* V6 BARS SHOWN IN CHART ARE THE NUMBER OF BARS REQUIRED FOR EACH END OPTION.
SPACE V6 BARS AT 10' INTERVALS THROUGH TYPICAL BARRIER SECTION.



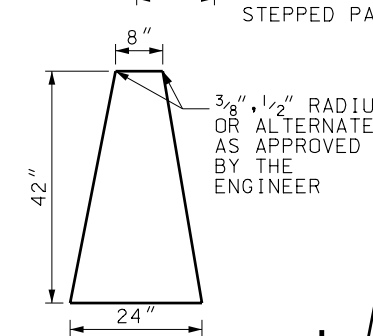
SECTION A-A



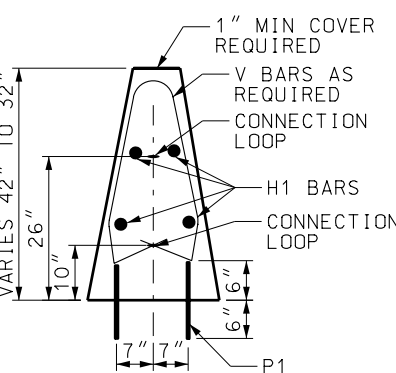
SECTION B-B
STEPPED PAVEMENT



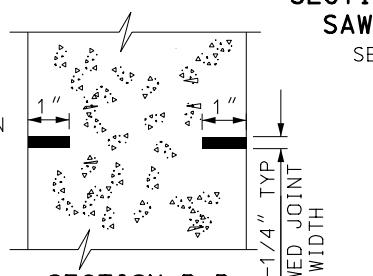
SECTION B-B



TYPICAL SECTION



SECTION C-C



SECTION B-B
SEE NOTE 6

NOTES:

- THE ENGINEER APPROVES CONTRACTOR DEVISED METHOD OF POSITIONING THE LONGITUDINAL REINFORCING STEEL +/- 1/2" AS DIMENSIONED.
- DO NOT USE TO SUPPORT HIGHWAY LIGHTING POLES. ADDITIONAL SUPPORT DETAILS REQUIRED.
- DO NOT USE BARRIER FOR BRIDGE APPLICATIONS.
- CHOOSE APPROPRIATE END TREATMENT:
 - CONSTRUCT APPROACH END AS PER DETAIL APPROACH END (A) WHEN CRASH CUSHION INSTALLATION IS REQUIRED.
 - CONSTRUCT TRAILING END AS PER DETAIL APPROACH END (A) WHEN CRASH CUSHION INSTALLATION IS REQUIRED.
 - CONSTRUCT SLOPED TRAILING END (B) WHEN BARRIER END DOES NOT REQUIRE A CRASH CUSHION, IS OUTSIDE THE MINIMUM REQUIRED CLEAR ZONE, BUT IS WITHIN 1.2 TIMES THE MINIMUM REQUIRED CLEAR ZONE OF APPROACH TRAFFIC.
 - USE OF SLOPED END PERMITTED FOR APPROACH TRAFFIC WHEN DESIGN SPEED IS 40 MPH OR LESS.
 - FULL HEIGHT BARRIER, TRAILING END OPTION (C), IS ACCEPTABLE WHEN THE END IS GREATER THAN 1.2 TIMES MINIMUM REQUIRED CLEAR ZONE OF APPROACH TRAFFIC.
- ATTACH ADDITIONAL H1 BAR TO P2 BAR WHEN STEPPED PAVEMENT CONFIGURATION REQUIRED.
- SAW CONTRACTION JOINTS AT PAVEMENT TRANSVERSE JOINTS. WHEN INSTALLED WITH ASPHALT PAVEMENT SAW CONTRACTION JOINTS AT 15' INTERVALS.
- V6 BARS PER TRAILING END OPTION 2 AT BOTH SIDES OF CONSTRUCTION JOINT.
- USE COATED REINFORCEMENT STEEL EXCEPT AS NOTED.
- USE CLASS AA(AE) CONCRETE.
- SEE STD DWG GW 9 FOR DELINEATION HARDWARE AND STD DWG GW 10 FOR DELINEATION SPACING.

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
RECOMMENDED FOR APPROVAL
CHAIRMAN STANDARDS COMMITTEE
APPROVED

CAST IN PLACE
CONSTANT SLOPE
BARRIER

STD DWG
BA 3A

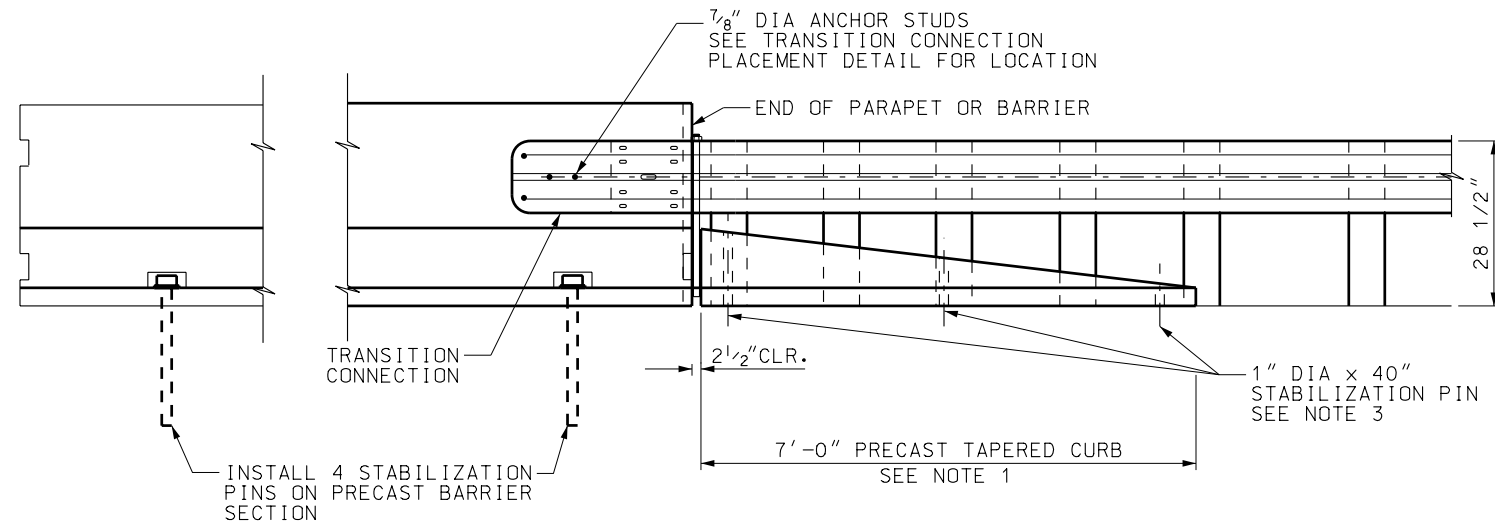
REVISIONS
1 02/24/05 G.S. REPLACED BA 3.

REMARKS
DATE
APPR.
NO.

DEPUTY DIRECTOR

STANDARD DRAWING TITLE

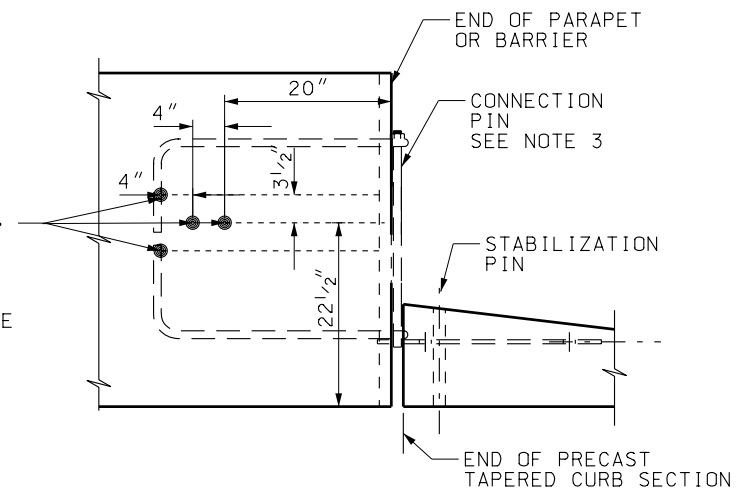
14-MAR-2005 D:\Filer\NEad\Standard Drawings\Imperial\2005\Approved\Change\Approved\ba4B.dgn



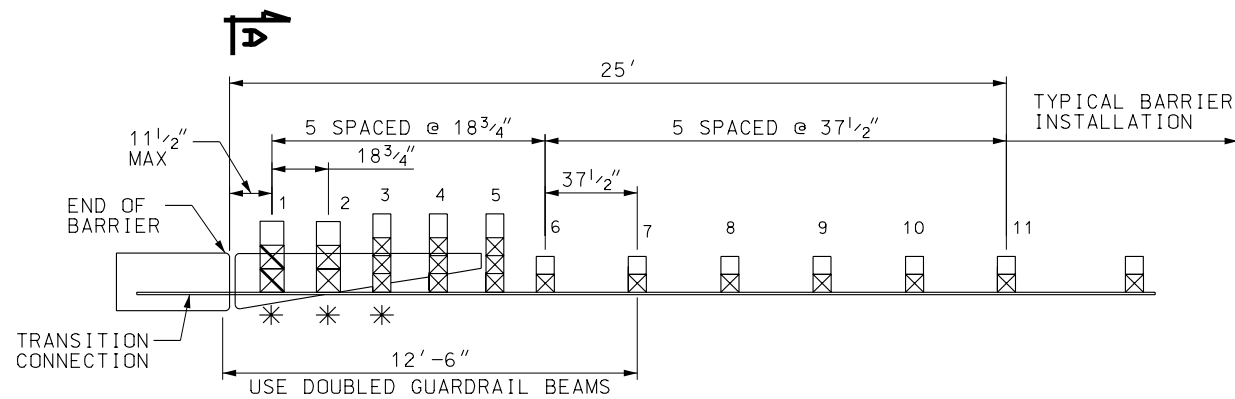
ELEVATION

RIGHT SIDE SHOWN LEFT SIDE SIMILAR

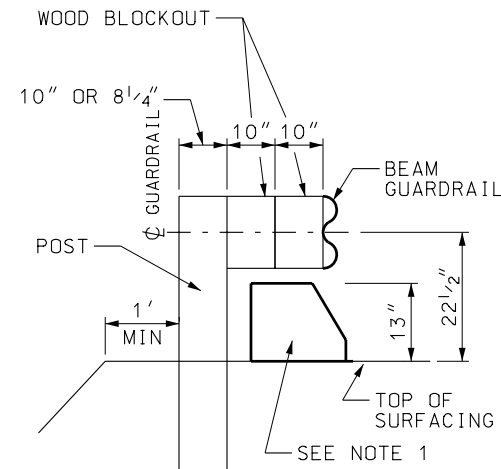
DRILL 4 - 1" x 5 1/2" HOLES.
EPOXY, USING AASHTO M235
TYPE 4 EPOXY, INSERT 4,
7/8" x 6 1/2" HIGH STRENGTH
GALVANIZED ANCHOR STUDS.
ALLOW EPOXY TO CURE BEFORE
ATTACHING TRANSITION
CONNECTION.



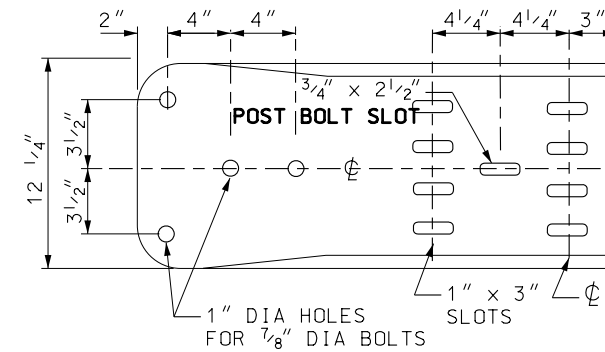
TRANSITION CONNECTION AND CURB SECTION
PLACEMENT DETAIL



POST PLACEMENT DETAIL



SECTION A-A



TRANSITION CONNECTION

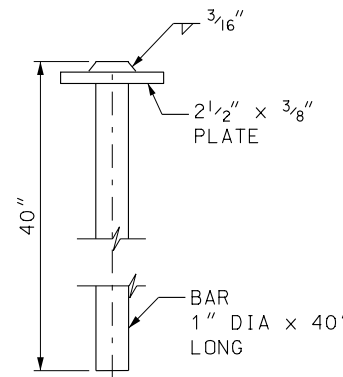
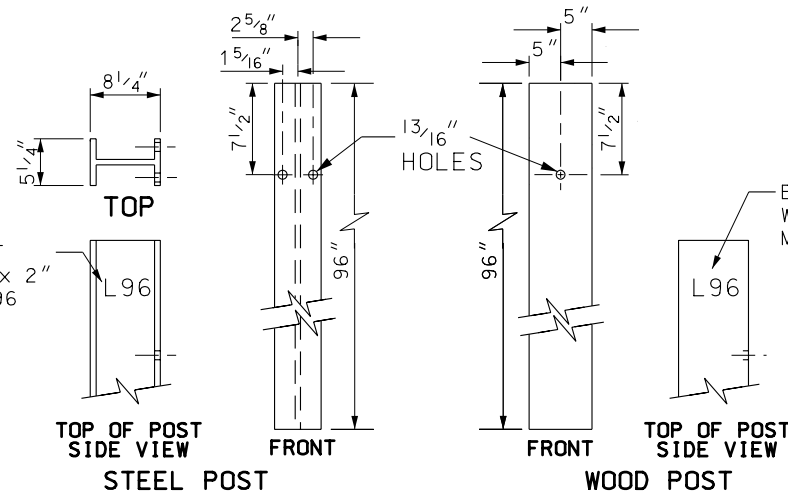
WOOD POST OPTION

POST # 1 & # 2
POSTS 10" x 10" x 8'
BLOCKS 10" x 10" x 14"
POSTS # 3 THROUGH # 11
TYPICAL WOOD POSTS
AND BLOCKS
(SEE STD DWG BA 4A)

STEEL POST OPTION

POSTS # 1 & # 2
W8 x 21 x 8'
BLOCKS 6" x 8" x 14"
POSTS # 3 THROUGH # 11
TYPICAL STEEL POSTS
AND BLOCKS
(SEE STD DWG BA 4A)

STAMP POST
WITH 1 1/2" x 2"
MARKING L96



STABILIZATION PIN

NOTES:

1. SEE PLAN SET FOR BARRIER OR PARAPET TYPE TO DETERMINE APPROPRIATE CURB SECTION. SEE STD DWG BA 4C FOR CURB SECTION REQUIREMENTS.
2. COMPLETE SITE PREPARATION PRIOR TO INSTALLING TRANSITION.
3. INSTALL A CONNECTION PIN USING A CONNECTION PIN FROM STD DWG BA 1A.
4. PRE-DRILL 1" HOLE THROUGH PAVED SURFACE PRIOR TO INSTALLING STABILIZATION PINS.

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION

W-BEAM GUARDRAIL
TRANSITION

STD DWG
BA 4B

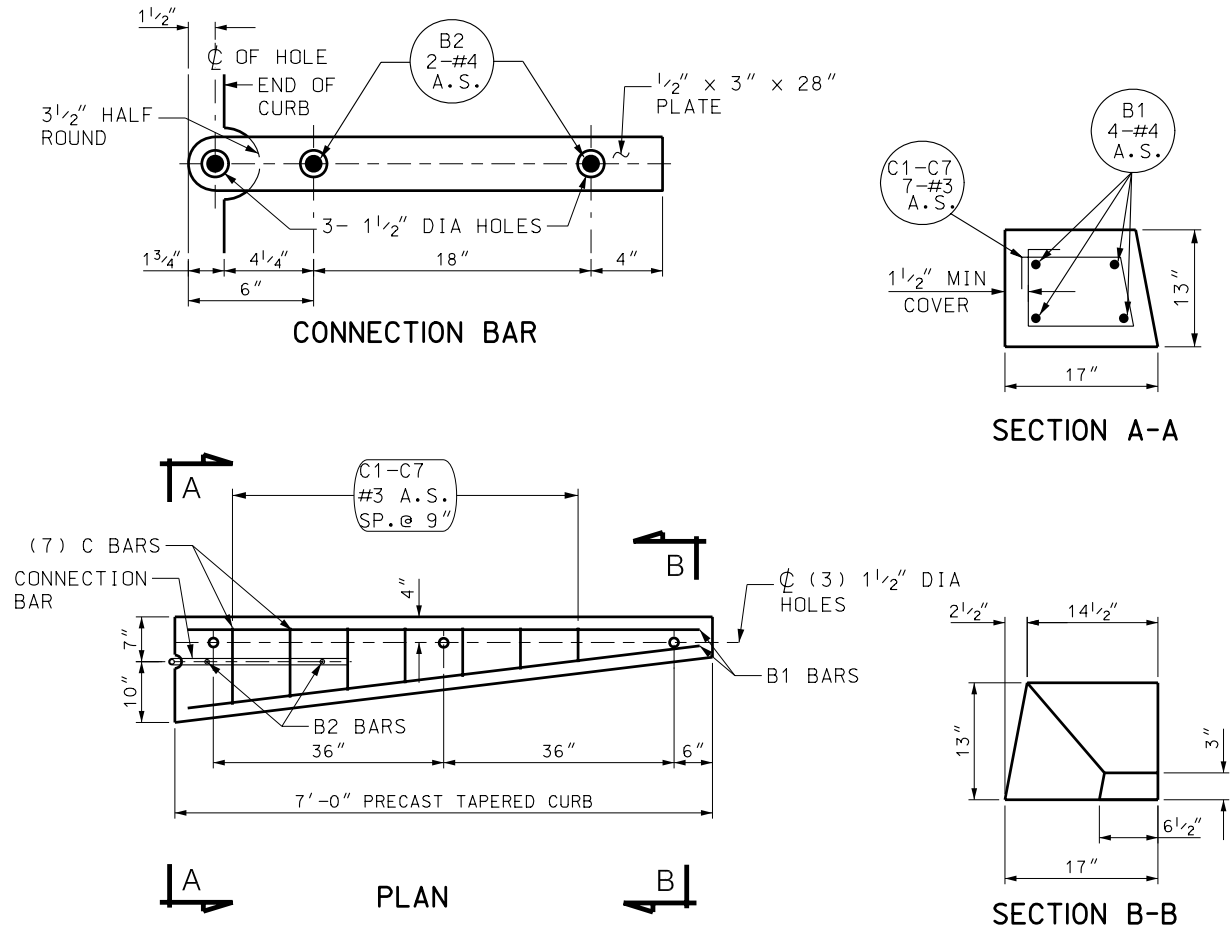
REVISIONS
1 02/24/05 G.S. TITLE CHANGED. DRAWING COMPLETELY REVISED.

RECOMMENDED FOR APPROVAL
CHAIRMAN STANDARDS COMMITTEE
APPROVED
DEPUTY DIRECTOR
DATE
FEB. 24, 2005
DATE
FEB. 24, 2005
REMARKS

14-MAR-2005 DGN: F:\et\N\etad\Standard Drawings\Imperial\2005\Approved\Change\Approved\BA04C.dgn

REINFORCING STEEL SCHEDULE									
<div><div><div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div></div><div>10.5°</div><div>TYPE I (FOR 1 SECTION ONLY)</div></div></div>									
BENT BARS (ALL DIMENSIONS ARE OUT TO OUT)									
MARK	SIZE	NO.	TYPE	LENGTH	A	B	C	D	E
C1	#3	1	1	4'-1"	9 1/2"	12 1/2"	10"	10"	3 1/2"
C2				3'-8"	7 1/2"	11 1/2"	9"	9"	
C3				3'-0"	6 1/2"	10 1/2"	8"	8"	
C4				2'-11"	5 1/2"	9"	5 1/2"	7 1/2"	
C5				2'-6 1/2"	4 1/2"	8"	4 1/2"	6 1/2"	
C6				2'-3 1/2"	3 1/2"	7"	3 1/2"	5 1/2"	3 1/2"
C7	#3	1	1	1'-11 1/2"	3"	6"	3 1/2"	5"	3"
STRAIGHT BARS									
MARK	SIZE	NO.	LENGTH						
B1	#4	4	6'-8"						
B2	#4	2	8"						

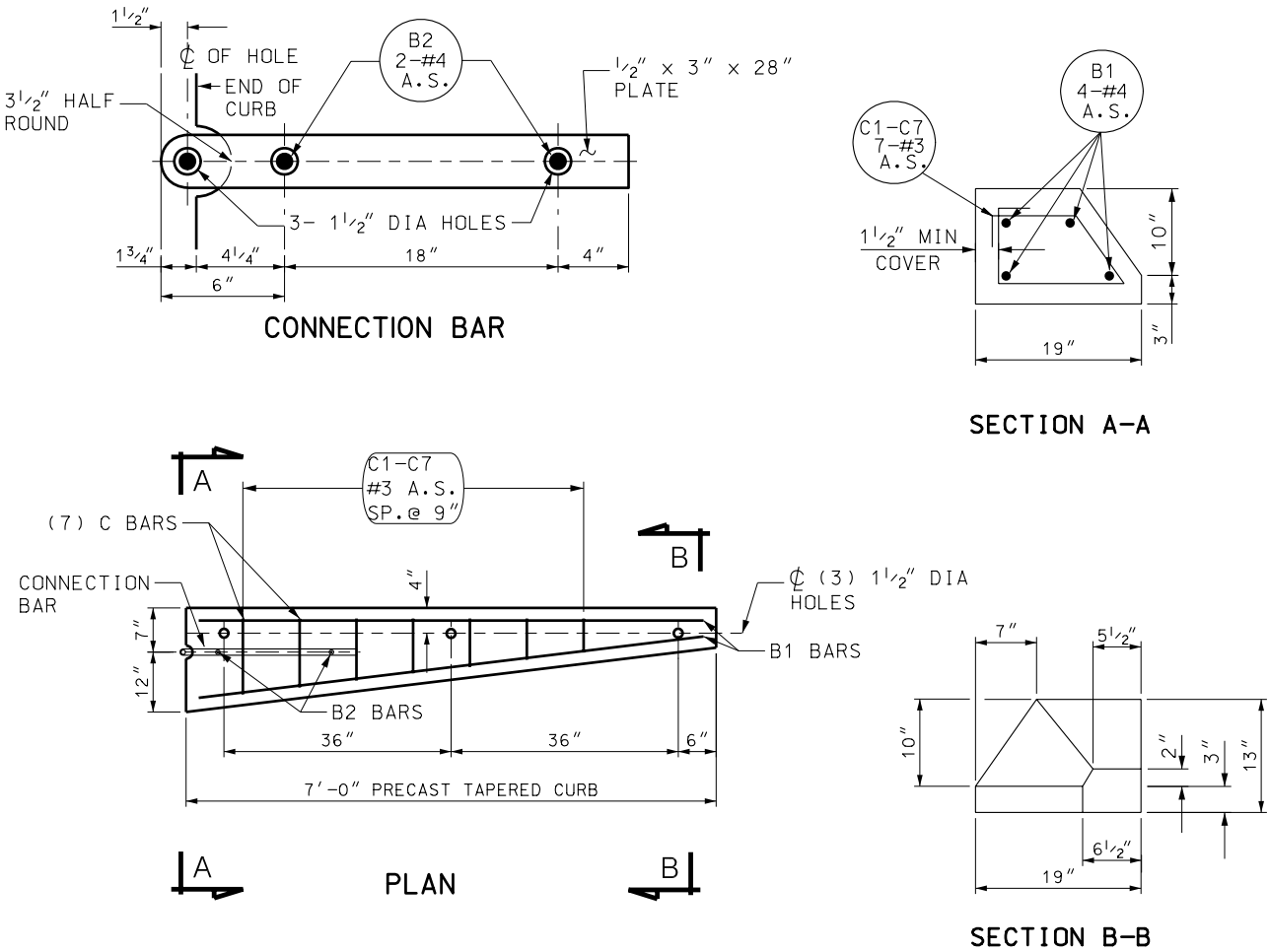
NOTE:
ALL REINFORCING BARS TO HAVE
1 1/2" MINIMUM COVER.



CONSTANT SLOPE CURB SECTION

REINFORCING STEEL SCHEDULE									
<div><div><div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div></div><div>35°</div><div>TYPE I (FOR 1 SECTION ONLY)</div></div></div>									
BENT BARS (ALL DIMENSIONS ARE OUT TO OUT)									
MARK	SIZE	NO.	TYPE	LENGTH	A	B	C	D	E
C1	#3	1	1	4'-2 1/2"	9"	14 1/2"	11"	9"	3 1/2"
C2				3'-10 1/2"	8"	13 1/2"	10"	8"	
C3				3'-6 1/2"	7"	12 1/2"	9"	8"	
C4				3'-2"	6"	11"	8"	7"	
C5				2'-10"	5 1/2"	10"	6 1/2"	6"	
C6				2'-6"	4 1/2"	8 1/2"	5 1/2"	5"	
C7	#3	1	1	2'-2 1/2"	4 1/2"	8"	5"	5"	3 1/2"
STRAIGHT BARS									
MARK	SIZE	NO.	LENGTH						
B1	#4	4	6'-9"						
B2	#4	2	8"						

NOTE:
ALL REINFORCING BARS TO HAVE
1 1/2" MINIMUM COVER.

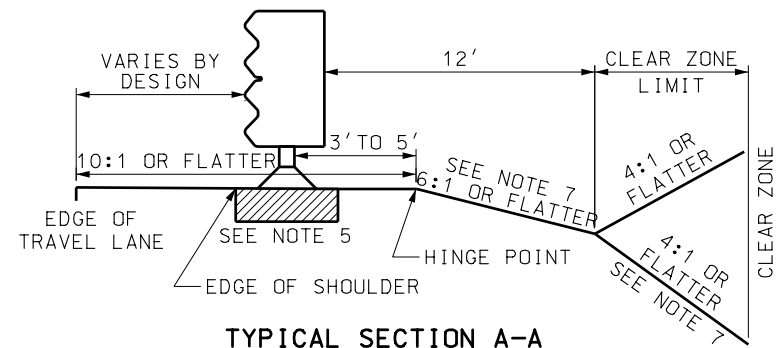
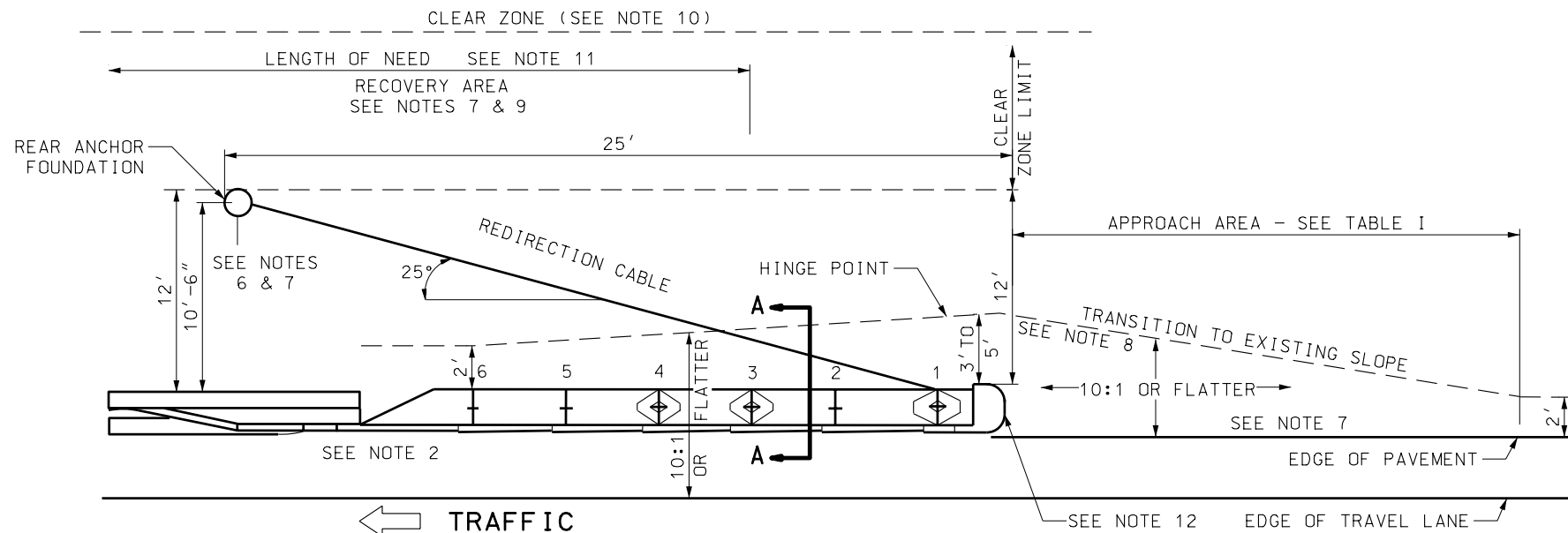


NEW JERSEY SHAPED CURB SECTION

UTAH DEPARTMENT OF TRANSPORTATION STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION SHEET 1 OF 1 RECOMMENDED FOR APPROVAL CHAIRMAN STANDARDS COMMITTEE APPROVED	FEB.24.2005 DATE FEB.24.2005 DATE	REMARKS		
W-BEAM GUARDRAIL TRANSITION CURB SECTIONS				
STANDARD DRAWING TITLE				
STD DWG BA 4C				

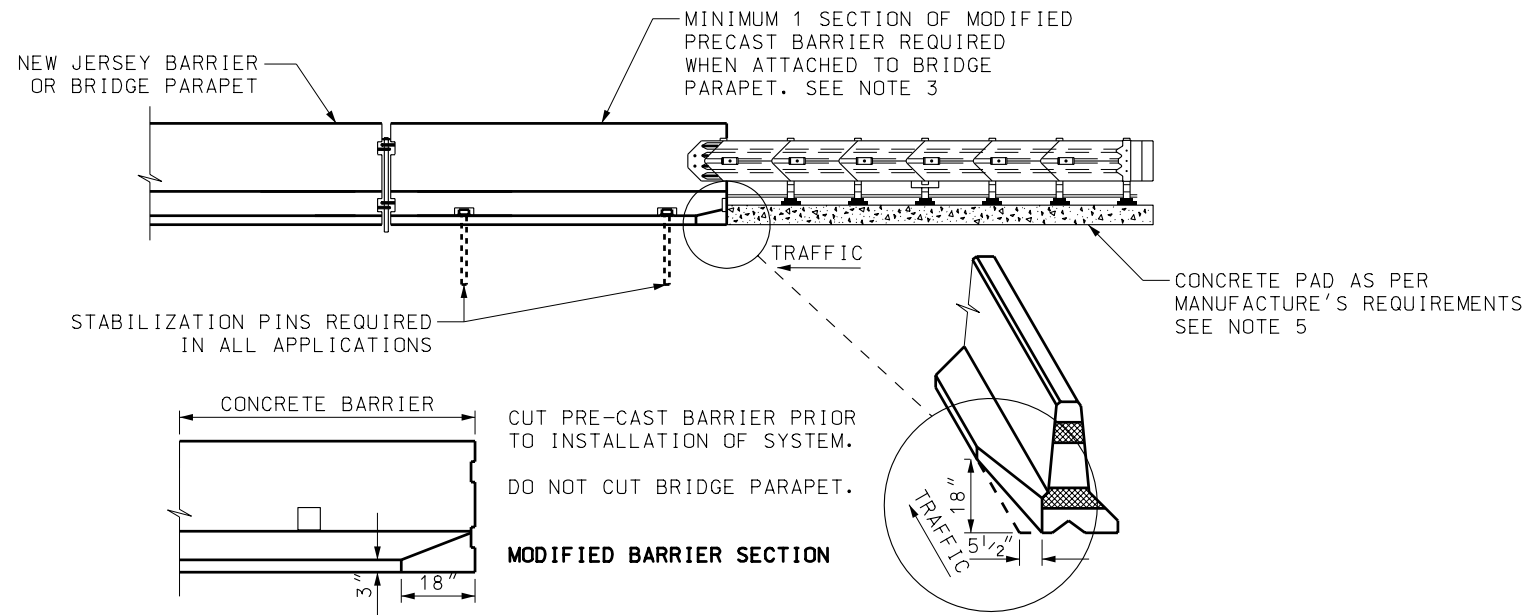
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CRASH CUSHION TYPE F

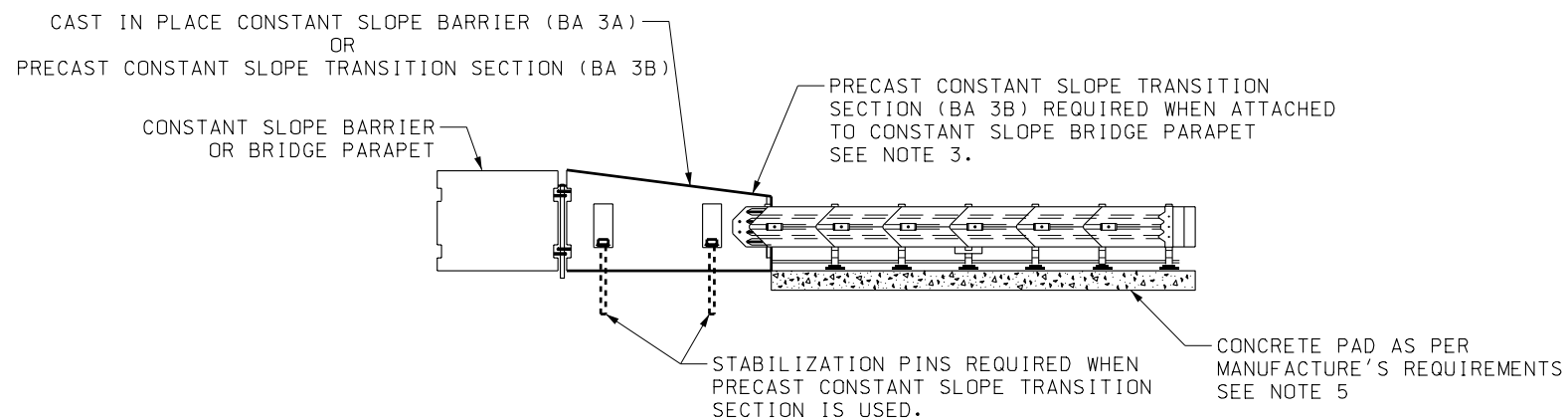


TYPICAL SECTION A-A

TABLE 1	
SPEED MPH	TAPER
LESS THAN 40	7:1
40 TO 55	10:1
60 TO 75	15:1



USE THIS DETAIL WHEN SYSTEM IS INSTALLED
WITH NEW JERSEY SHAPED BARRIER



USE THIS DETAIL WHEN SYSTEM IS INSTALLED
WITH CONSTANT SLOPE BARRIER

NOTES FOR CRASH CUSHION TYPE F

1. THE QUADTREND-350 IS MANUFACTURED BY ENERGY ABSORPTION SYSTEMS, SEE UDOT'S GUIDELINES FOR CRASH CUSHIONS FOR SPECIFIC SYSTEM DETAILS.
2. USE SYSTEM WHEN DIRECT ATTACHMENT TO BARRIER IS REQUIRED AND THE LONGITUDINAL SPACE IN FRONT OF THE HAZARD IS EQUAL TO THE REQUIRED MINIMUM LENGTH AS STATED IN TABLE 1. INSTALL SYSTEM AS PER UDOT'S AND MANUFACTURER'S SPECIFICATIONS.
3. CUT PRE-CAST NEW JERSEY BARRIER AS PER DETAIL, PRIOR TO INSTALLATION OF SYSTEM. SEAL CUT WITH THE SAME TYPE OF SEALER USED ON BARRIER. DO NOT CUT BRIDGE PARAPET. INSTALL 1 SECTION OF A PRECAST BARRIER, CUT AS PER DETAIL. INSTALL STABILIZATION PINS IN BARRIER SECTION. CONSTANT SLOPE BARRIER OR CONSTANT SLOPE BARRIER TRANSITION DOES NOT NEED MODIFICATION. THE REQUIRED BARRIER SECTIONS ARE A SEPARATE PAY ITEM FROM THE CRASH CUSHION.
4. HAVE SHOP DRAWING AVAILABLE ON SITE FOR REFERENCE DURING INSTALLATION.
5. INSTALL CONCRETE PAD AS PER MANUFACTURER'S REQUIREMENTS.
6. PLACE CABLE ANCHOR FOUNDATION IN SUCH A MANNER THAT THE REDIRECTING CABLE LAYS 6:1 OR FLATTER ON TOP OF THE GROUND, AND THE FOUNDATION WITH THE CABLE ANCHOR BRACKET ATTACHED DOES NOT EXCEED 4 INCHES ABOVE GROUND LEVEL. DO NOT BURY REDIRECTION CABLE.
7. COMPLETE SLOPE PREPARATION PRIOR TO INSTALLING SYSTEM.
 - A. USE A 10:1 OR FLATTER SLOPE IN APPROACH AREA.
 - B. A FORESLOPE AREA OF 12 FOOT x 25 FOOT AT 6:1 OR FLATTER REQUIRED FOR REAR ANCHOR FOUNDATION INSTALLATION
 - C. USE A 4:1 OR FLATTER FORESLOPE IN RECOVERY AREA, AFTER REAR ANCHOR SLOPES HAVE BEEN ESTABLISHED
 - 1) IF A 4:1 FORESLOPE IS IMPRACTICAL USE A MAXIMUM 3:1 FORESLOPE IN RECOVERY AREA. ESTABLISH RECOVERY AREA AT THE TOE OF THE 3:1 FORESLOPE OF 4:1 OR FLATTER.
 - D. USE OF 4:1 BACKSLOPE TO CLEAR ZONE LIMIT IN RECOVERY AREA PERMITTED ONLY AFTER THE REAR ANCHOR FORESLOPE S HAVE BEEN ESTABLISHED. IF A 4:1 BACKSLOPE IS IMPRACTICAL A 3:1 IS PERMITTED.
8. CONSTRUCT PLATFORM AS REQUIRED EVEN IF THE PLATFORM EXTENDS BEYOND THE CLEAR ZONE.
9. CLEAR THE RECOVERY AND APPROACH AREAS OF ANY FIXED OBJECTS.
 - A. DO NOT PLACE SIGNS OR POLES IN APPROACH AREA.
 - B. USE BREAKAWAY SIGNS OR POLES WHEN PLACED IN RECOVERY AREA. MAINTAIN A MINIMUM 10 FOOT CLEARANCE TO THE SIDES AND REAR OF SYSTEM.
10. ATTACH SAND CONTAINERS AT POSTS 1, 3 AND 4.
11. USE CURRENT EDITION OF ROADSIDE DESIGN GUIDE TO ESTABLISH CLEAR ZONE AND LENGTH OF NEED (LON) REQUIREMENTS.
12. INSTALL REQUIRED MARKING AS PER STD DWG CC 1.

UTAH DEPARTMENT OF TRANSPORTATION

STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION

RECOMMENDED FOR APPROVAL

CHAIRMAN STANDARDS COMMITTEE

DEPUTY DIRECTOR

GRADING AND
INSTALLATION DETAILS
CRASH CUSHION
TYPE F

QUAD TREND 350

STANDARD DRAWING TITLE

STD DWG

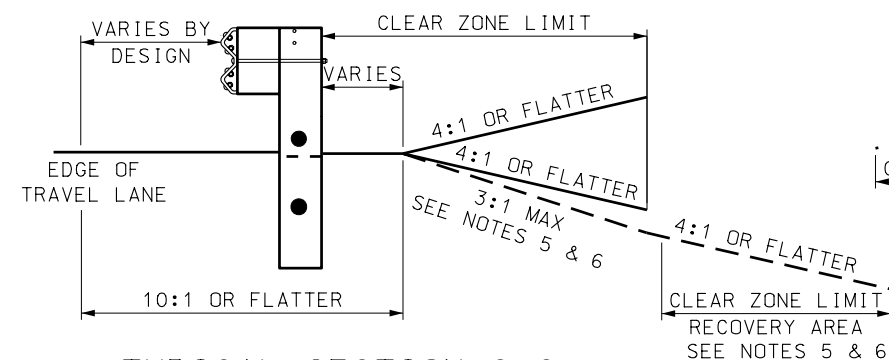
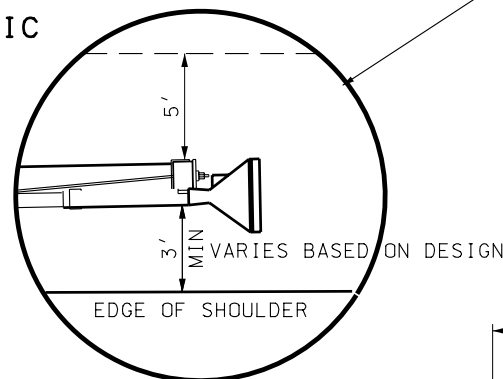
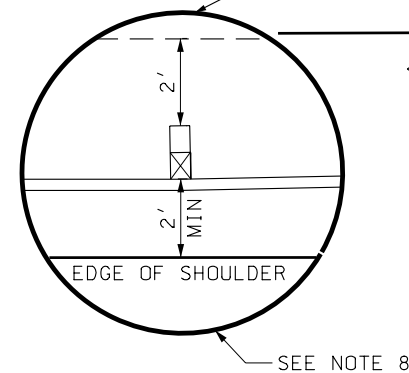
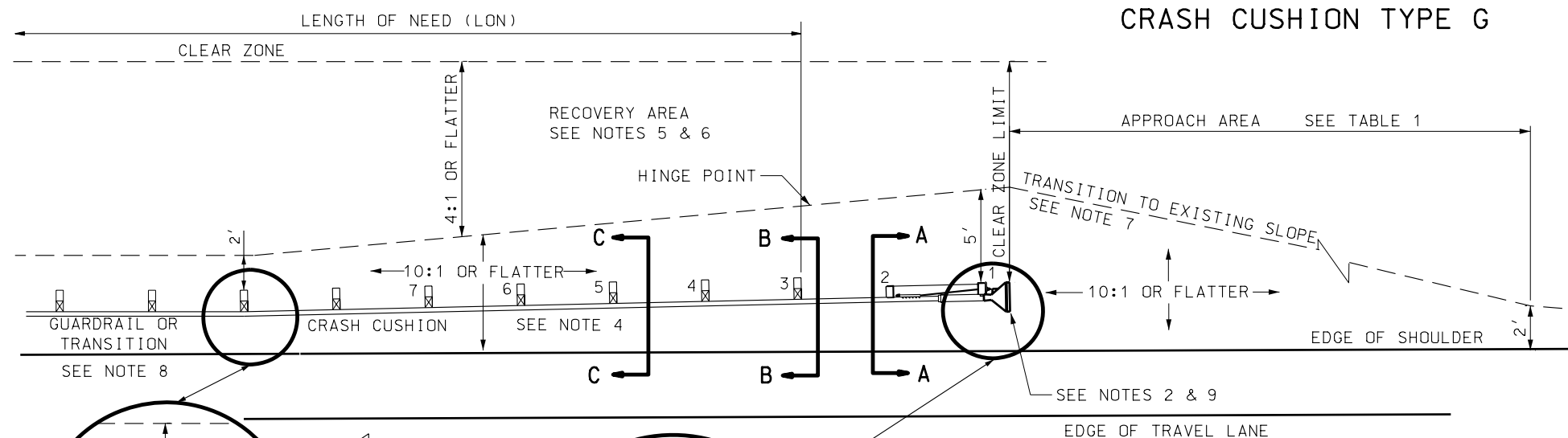
CC 7A

REVISIONS

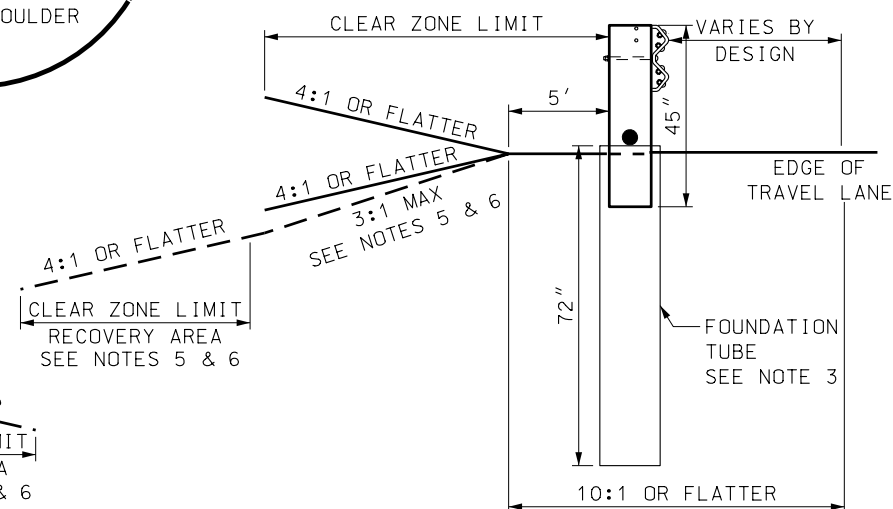
1 2-24-05 GS ADDED BARRIER MODIFICATION DETAILS, MODIFIED
RECOVERY AREA REQUIREMENTS, REVISED NOTES AND
TABLE 1. PREVIOUSLY CC 7.

NO. DATE APPR. REMARKS

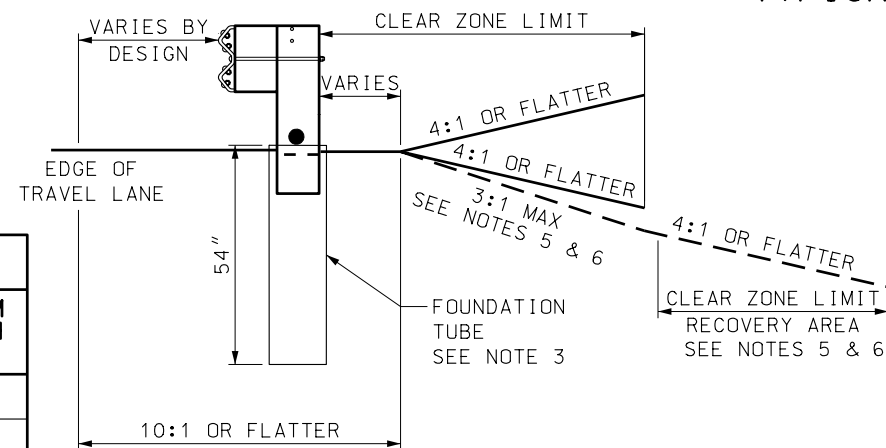
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TYPICAL SECTION C-C
POSTS 5-8



TYPICAL SECTION A-A
POSTS 1-2



TYPICAL SECTION B-B
POSTS 3-4

TABLE 1		
SPEED MPH	TAPER	MINIMUM LENGTH FEET
LESS THAN 40	7:1	70
40 TO 55	10:1	100
60 TO 75	15:1	150

NOTES:

- APPROVED SYSTEMS: ET-2000 AND ET-PLUS MANUFACTURED BY TRINITY INDUSTRIES AND THE SKT-350, MANUFACTURED BY ROAD SYSTEMS INC. REFER TO UDOT'S GUIDELINES FOR CRASH CUSHIONS FOR SPECIFIC SYSTEM DETAILS.
- SYSTEM OFFSET:
 - INSTALL SYSTEM WITH 1 FOOT OFFSET (50:1 FLARE RATE) WHEN USED WITH A TANGENT BARRIER SYSTEM.
 - INSTALL SYSTEM AT THE SAME FLARE RATE AS THE BARRIER IT IS BEING ATTACHED TO.
- POST OPTIONS: REFER TO UDOT'S GUIDELINES FOR CRASH CUSHION FOR APPROVED POST OPTIONS.
- RAIL ELEMENTS
 - USE 12 1/2 FOOT RAIL ELEMENTS AS SPECIFIED BY THE SYSTEM MANUFACTURER.
 - DO NOT BOLT RAIL ELEMENT AT POST 1.
 - REFER TO MANUFACTURE SPECIFICATIONS FOR OTHER RAIL TO POST BOLT REQUIREMENTS.
- COMPLETE SLOPE PREPARATION PRIOR TO INSTALLING SYSTEM.
 - USE 10:1 OR FLATTER SLOPES IN APPROACH AREA.
 - USE 4:1 OR FLATTER FORESLOPE OR BACKSLOPE IN THE RECOVERY AREA.
 - IF A 4:1 FORESLOPE IN RECOVERY AREA IS IMPRACTICAL USE A MAXIMUM 3:1 FORESLOPE. ESTABLISH A RECOVERY AREA AT THE TOE OF THE 3:1 FORESLOPE OF 4:1 OR FLATTER.
 - USE A 4:1 BACKSLOPE TO THE CLEAR ZONE LIMIT IN THE RECOVERY AREA. IF A 4:1 BACKSLOPE CANNOT BE ESTABLISHED A 3:1 BACKSLOPE IS PERMITTED.
- CLEAR RECOVERY AND APPROACH AREAS OF ANY FIXED OBJECTS.
 - DO NOT PLACE SIGNS OR POLES IN APPROACH AREA.
 - USE BREAKAWAY SIGNS OR POLES WHEN PLACED IN RECOVERY AREA, AND MAINTAIN A MINIMUM 10 FOOT CLEARANCE TO THE SIDES AND REAR OF THE SYSTEM.
- CONSTRUCT PLATFORM AS REQUIRED WHEN THE SPACE IS AVAILABLE EVEN IF THE PLATFORM EXTENDS BEYOND THE CLEAR ZONE REQUIREMENTS. SEE STD DWG CC 8B FOR EXCEPTIONS.
- USE GUARDRAIL TRANSITION, STD DWG BA 4 SERIES, WHEN ATTACHING SYSTEM TO CONCRETE BARRIER OR BRIDGE PARAPET.
- INSTALL REQUIRED MARKINGS AS PER STD DWG CC 1.
- USE THE CURRENT EDITION, ROADSIDE DESIGN GUIDE TO ESTABLISH CLEAR ZONE REQUIREMENT AND LENGTH OF NEED (LON) REQUIREMENTS.

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION

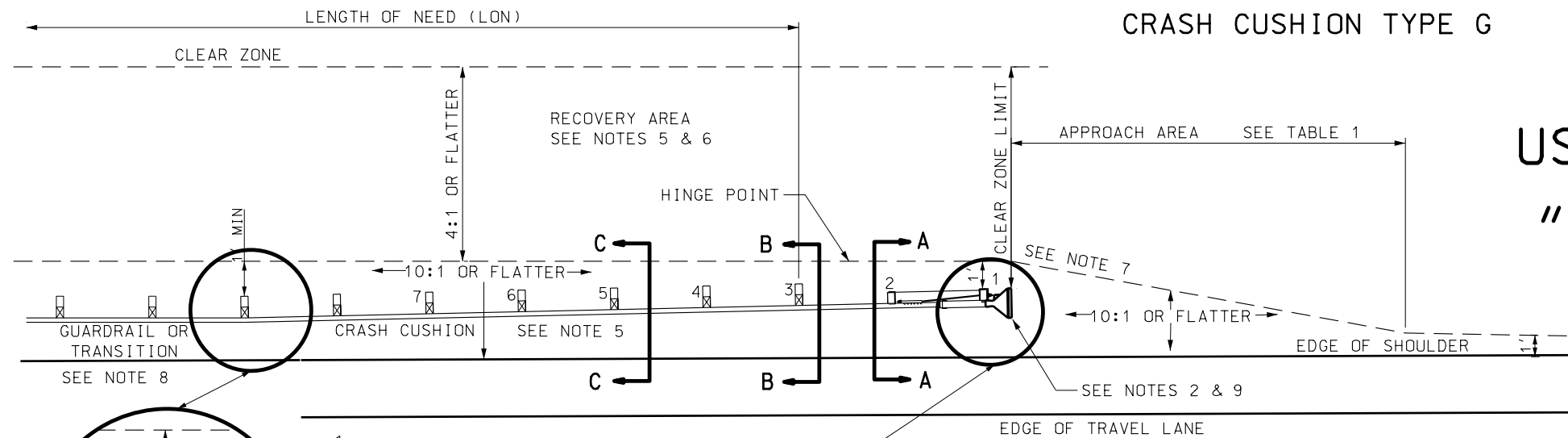
GRADING AND
INSTALLATION DETAILS
CRASH CUSHION
TYPE G

STD DWG
CC 8A

REVISIONS		NO.	DATE	APPR.	REMARKS
1	2-24-05	GS			MODIFIED RECOVERY AREA REQUIREMENTS, REVISED NOTES AND TABLE 1. PREVIOUSLY CC 8.

RECOMMENDED FOR APPROVAL
SALESMAN
DATE
FEB.24.2005
CHAIRMAN STANDARDS COMMITTEE
APPROVED
DEPUTY DIRECTOR
DATE
FEB.24.2005

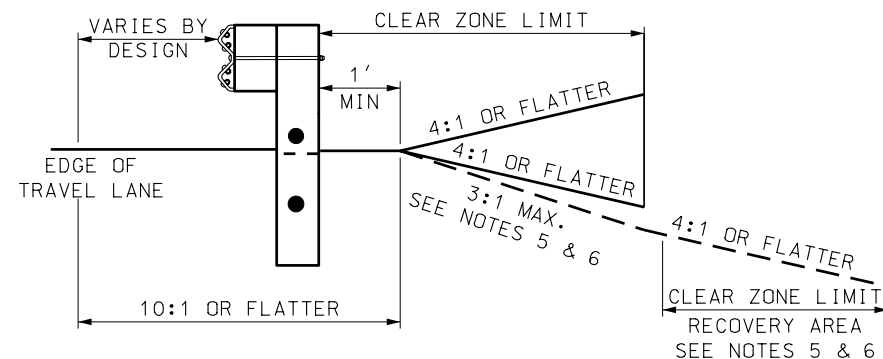
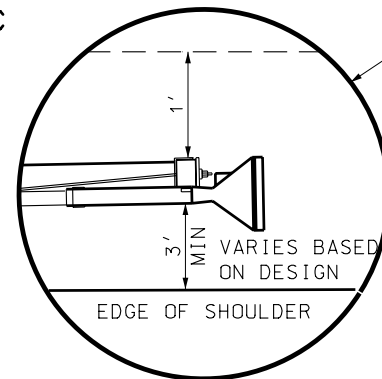
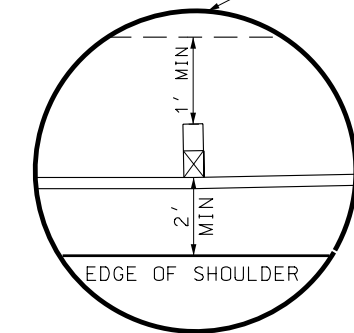
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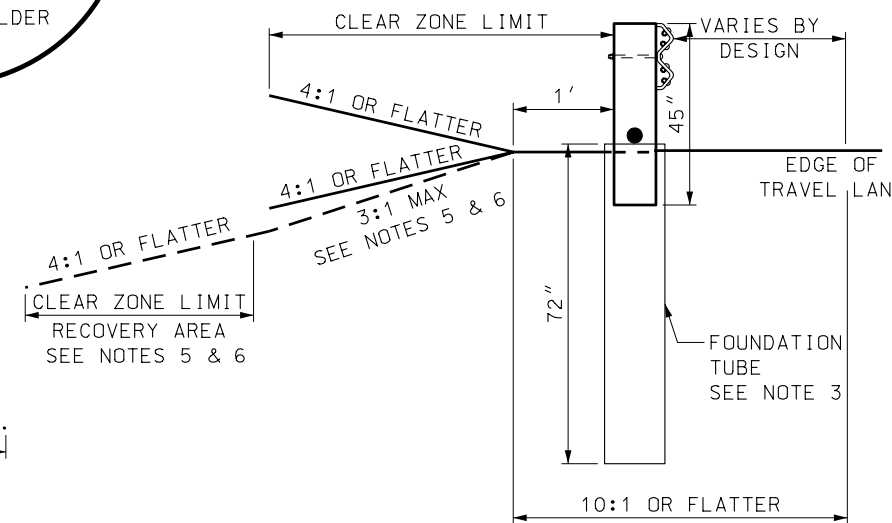
USE THIS DETAIL FOR
"3R" PROJECTS ONLY

NOTES:

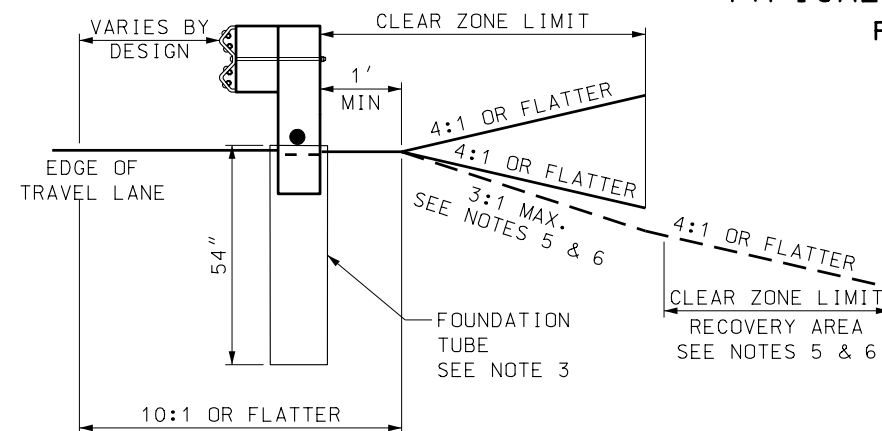
- APPROVED SYSTEMS: ET-2000 AND ET-PLUS MANUFACTURED BY TRINITY INDUSTRIES AND THE SKT-350, MANUFACTURED BY ROAD SYSTEMS INC. REFER TO UDOT'S GUIDELINES FOR CRASH CUSHIONS FOR SPECIFIC SYSTEM DETAILS.
- SYSTEM OFFSET:
 - INSTALL SYSTEM WITH 1 FOOT OFFSET (50:1 FLARE RATE) WHEN USED WITH A TANGENT BARRIER SYSTEM.
 - INSTALL SYSTEM AT THE SAME FLARE RATE AS THE BARRIER INSTALLATION SYSTEM IS BEING ATTACHED TO.
- POST OPTIONS: REFER TO UDOT'S GUIDELINES FOR CRASH CUSHION FOR APPROVED POST OPTIONS.
- RAIL ELEMENTS
 - USE 12 1/2 FOOT RAIL ELEMENTS AS SPECIFIED BY THE SYSTEM MANUFACTURER.
 - DO NOT BOLT RAIL ELEMENT TO POST 1.
 - REFER TO MANUFACTURE SPECIFICATIONS FOR OTHER RAIL TO POST BOLT REQUIREMENTS.
- COMPLETE SLOPE PREPARATIONS PRIOR TO INSTALLING SYSTEM.
 - USE 10:1 OR FLATTER SLOPES IN APPROACH AREAS.
 - CONSTRUCT RECOVER AREA SLOPE AS PER CC8A WHEN CONDITIONS PERMIT. CONSULT ENGINEER FOR ALLOWABLE SLOPES WHEN SLOPE REQUIREMENTS OF CC 8A CANNOT BE MET.
- CLEAR RECOVERY AND APPROACH AREAS OF ANY FIXED OBJECTS.
 - DO NOT PLACE SIGNS OR POLES IN APPROACH AREA.
 - USE BREAKAWAY SIGNS OR POLES WHEN PLACED IN RECOVERY AREA, AND MAINTAIN A MINIMUM 10 FOOT CLEARANCE TO THE SIDES AND REAR OF THE SYSTEM.
- CONSTRUCT PLATFORM AS REQUIRED EVEN IF THE PLATFORM EXTENDS BEYOND THE CLEAR ZONE REQUIREMENT.
- USE GUARDRAIL TRANSITION, STD DWG BA 4 SERIES, WHEN ATTACHING SYSTEM TO CONCRETE BARRIER OR BRIDGE PARAPET.
- INSTALL REQUIRED MARKINGS AS PER STD DWG CC 1.
- USE THE CURRENT EDITION, ROADSIDE DESIGN GUIDE TO ESTABLISH CLEAR ZONE REQUIREMENT AND LENGTH OF NEED (LON) REQUIREMENTS.



TYPICAL SECTION C-C
POSTS 5-8



TYPICAL SECTION A-A
POSTS 1-2



TYPICAL SECTION B-B
POSTS 3-4

TABLE 1		
SPEED MPH	TAPER	MINIMUM LENGTH FEET
LESS THAN 40	7:1	70
40 TO 55	10:1	100
60 TO 75	15:1	150

REVISIONS
1 02/24/05 G.S. NEW DRAWING.

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
RECOMMENDED FOR APPROVAL
CHAIRMAN STANDARDS COMMITTEE
APPROVED

FEB.24.2005
DATE

FEB.24.2005
DATE

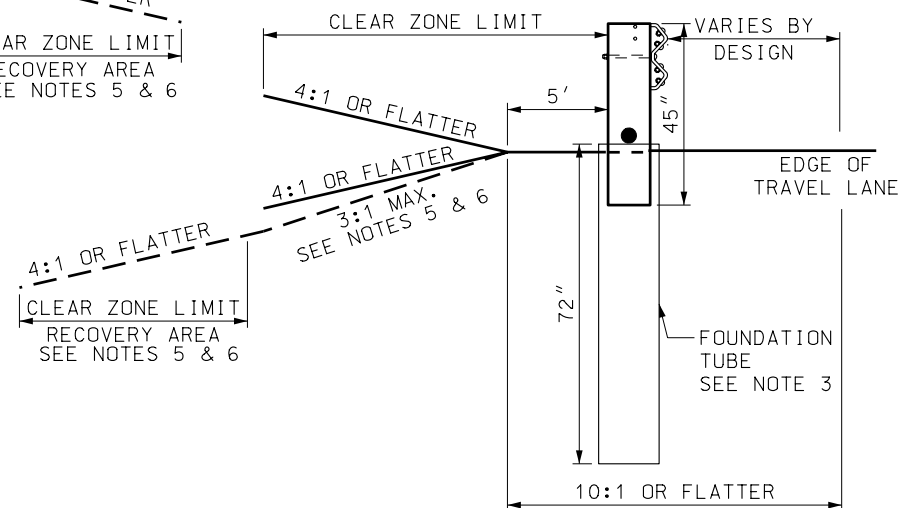
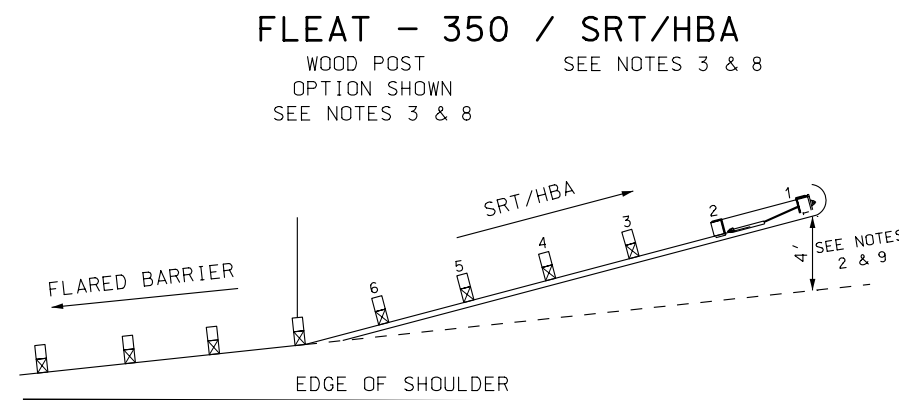
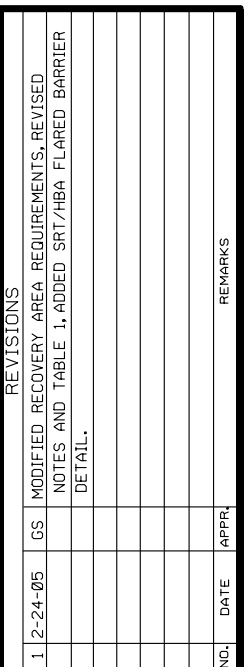
REMARKS

DEPUTY DIRECTOR

GRADING AND
INSTALLATION DETAILS
FOR "3R" PROJECTS
CRASH CUSHION TYPE G

STANDARD DRAWING TITLE

STD DWG
CC 8B



TYPICAL SECTION B-B
POST 1-2

TABLE 1		
SPEED MPH	TAPER	MINIMUM LENGTH FEET
LESS THAN 40	7:1	70
40 TO 55	10:1	100
60 TO 75	15:1	150

1. APPROVED SYSTEMS: FLEAT 350, MANUFACTURED BY ROAD SYSTEMS, INC. AND SRT/HBA MANUFACTURED BY TRINITY INDUSTRIES REFER TO UDOT'S GUIDELINES FOR CRASH CUSHIONS FOR SPECIFIC SYSTEM DETAILS.
2. SYSTEM OFFSET:
 - A. INSTALL SYSTEM WITH A MINIMUM 4 FOOT OFFSET WHEN USED WITH A TANGENT BARRIER SYSTEM.
 - B. FLEAT-350: INSTALL AT THE SAME FLARE RATE AS THE BARRIER INSTALLATION.
 - C. SRT/HBA: INSTALL SYSTEM WITH A 4 FOOT OFFSET, FROM THE FLARED BARRIER EXTENDED.
3. POST OPTIONS: REFER TO UDOT'S GUIDELINES FOR CRASH CUSHIONS FOR APPROVED POST OPTIONS.
 - A. SRT/HBA: THE LAST POST OF THE GUARDRAIL INSTALLATION OR THE GUARDRAIL TRANSITION ELEMENT (POST #11) WILL BE SUBSTITUTED WITH A CRT POST AS PER MANUFACTURER'S REQUIREMENTS.
4. USE 12¹/₂ FOOT RAIL SECTIONS (3 EACH SECTIONS), SLOTTED AS PER MANUFACTURER'S REQUIREMENTS.
5. COMPLETE SLOPE PREPARATION PRIOR TO INSTALLING SYSTEM.
 - A. USE 10:1 OR FLATTER SLOPES IN APPROACH AREA.
 - B. USE 4:1 OR FLATTER FORESLOPE OR BACKSLOPE IN THE RECOVERY AREA.
 - 1) IF A 4:1 FORESLOPE. IN RECOVERY AREA IS IMPRACTICAL USE A MAXIMUM 3:1 FORESLOPE. ESTABLISH A RECOVERY AREA AT THE TOE OF THE 3:1 FORESLOPE OF 4:1 OR FLATTER.
 - C. USE A 4:1 BACKSLOPE TO THE CLEAR ZONE LIMIT IN THE RECOVERY AREA IF A 4:1 CANNOT BE ESTABLISHED A 3:1 IS PERMITTED.
6. CLEAR RECOVERY AND APPROACH AREAS OF ANY FIXED OBJECTS.
 - A. DO NOT PLACE SIGNS OR POLES IN APPROACH AREA.
 - B. USE BREAKAWAY SIGNS OR POLES WHEN PLACED IN RECOVERY AREA, AND MAINTAIN A MINIMUM 10 FOOT CLEARANCE TO THE SIDES AND REAR OF SYSTEM.
7. CONSTRUCT PLATFORM AS REQUIRED EVEN IF THE PLATFORM EXTENDS BEYOND THE CLEAR ZONE REQUIREMENTS.
8. USE GUARDRAIL TRANSITION, STD DWG BA 4 SERIES, WHEN ATTACHING THE SYSTEM TO CONCRETE BARRIER OR BRIDGE PARAPET.
 - A. SRT/HBA: REPLACE THE LAST POST OF THE TRANSITION WITH A CRT POST. SEE NOTE 3.
9. INSTALL REQUIRED MARKINGS AS PER STD DWG CC 1.
10. USE THE CURRENT ROADSIDE DESIGN GUIDE TO ESTABLISH CLEAR ZONE REQUIREMENT AND LENGTH OF NEED (LON) REQUIREMENTS.

GRADING AND INSTALLATION DETAILS CRASH CUSHION TYPE H

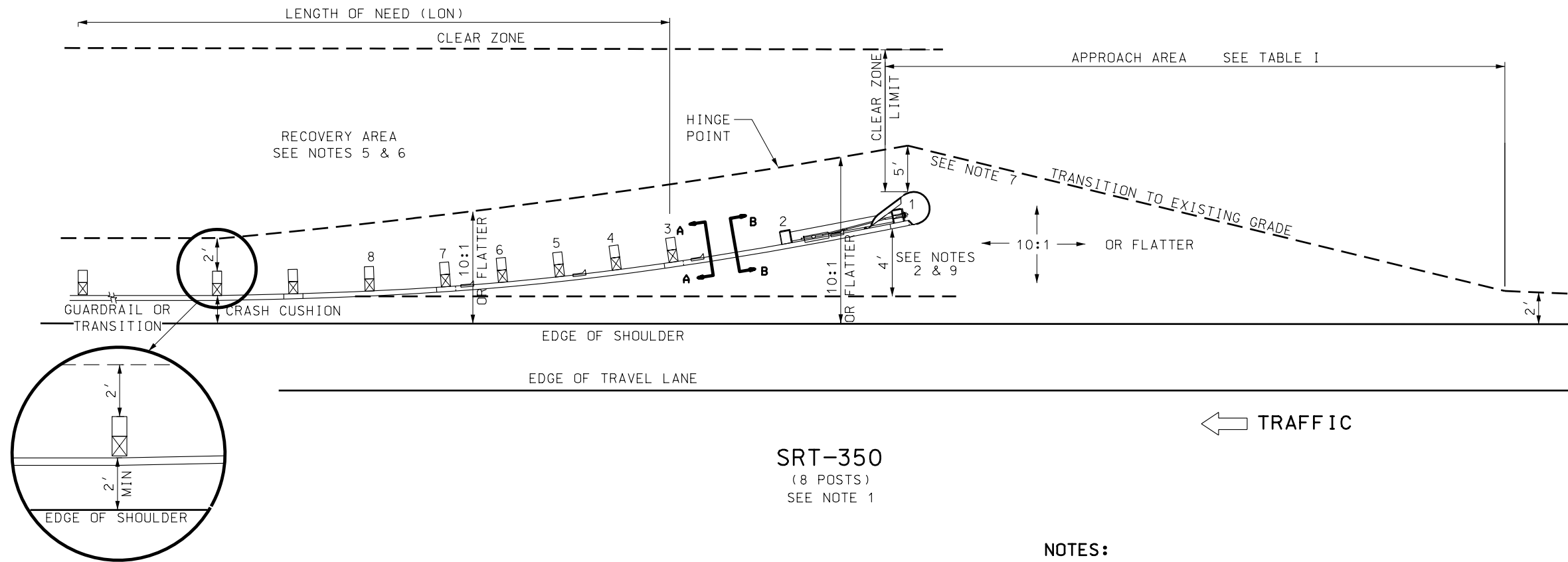
CHAIRMAN STANDARDS COMMITTEE
APPROVED
FEB. 24, 2005
DATE

DEPUTY DIRECTOR
FEB. 24, 2005
DATE

STANDARD DRAWING TITLE

STD DWG
CC 9A

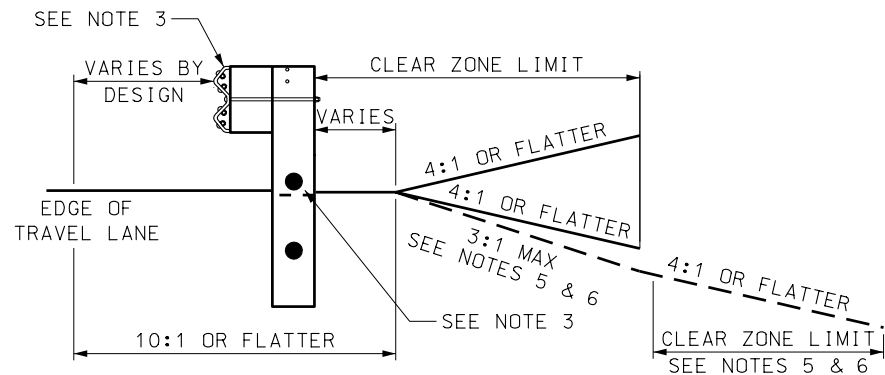
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SRT-350
(8 POSTS)
SEE NOTE 1

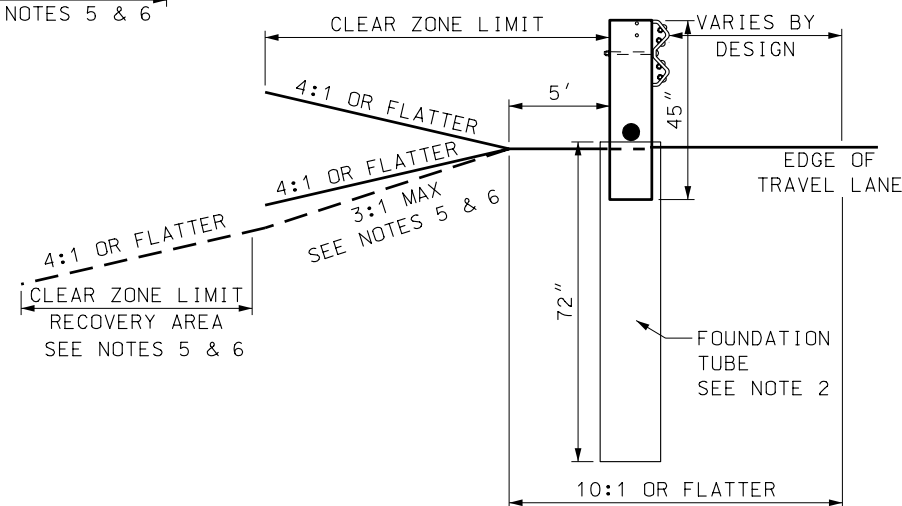
NOTES:

- APPROVED SYSTEM: SRT 350 MANUFACTURED BY TRINITY INDUSTRIES REFER TO UDOT'S GUIDELINES FOR CRASH CUSHIONS FOR SPECIFIC SYSTEM DETAILS.
- SYSTEM OFFSET:
 - THE SRT-350 INCORPORATES A PARABOLIC FLARE. INSTALL SYSTEM WITH A MINIMUM 4 FOOT OFFSET.
- POST OPTIONS:
 - WOOD POST ONLY
 - POSTS 1 AND 2, 45 INCH BREAKAWAY POSTS SET INSIDE 6 FOOT FOUNDATION TUBES. TUBES NO GREATER THAN 4 INCHES ABOVE GROUND.
 - POSTS 3 THROUGH 8 STANDARD CRT POST. THE BOTTOM OF THE TOP HOLE OF THE CRT POLE IS PLACED AT GROUND LEVEL.
- USE 12½ FOOT RAIL SECTIONS (3 EACH SECTIONS), SLOTTED AS PER MANUFACTURER'S REQUIREMENTS.
- COMPLETE SLOPE PREPARATION PRIOR TO INSTALLING SYSTEM.
 - USE 10:1 OR FLATTER SLOPES IN APPROACH AREA.
 - USE 4:1 OR FLATTER FORESLOPE OR BACKSLOPE IN THE RECOVERY AREA.
 - IF A 4:1 FORESLOPE. IN RECOVERY AREA IS IMPRACTICAL USE A MAXIMUM 3:1 FORESLOPE. ESTABLISH A RECOVERY AREA AT THE TOE OF THE 3:1 FORESLOPE OF 4:1 OR FLATTER.
 - USE A 4:1 BACKSLOPE TO THE CLEAR ZONE LIMIT IN THE RECOVERY AREA. IF A 4:1 CANNOT BE ESTABLISHED A 3:1 IS PERMITTED.
- CLEAR RECOVERY AND APPROACH AREAS OF ANY FIXED OBJECTS.
 - DO NOT PLACE SIGNS OR POLES IN APPROACH AREA.
 - USE BREAKAWAY SIGNS OR POLES WHEN PLACED IN RECOVERY AREA. MAINTAIN A MINIMUM 10 FOOT CLEARANCE TO THE SIDES AND REAR OF SYSTEM.
- CONSTRUCT PLATFORM AS REQUIRED EVEN IF THE PLATFORM EXTENDS BEYOND THE CLEAR ZONE REQUIREMENTS.
- USE GUARDRAIL TRANSITION, STD DWG BA 4 SERIES, WHEN ATTACHING THE SYSTEM TO CONCRETE BARRIER OR BRIDGE PARAPET.
- INSTALL REQUIRED MARKINGS AS PER STD DWG CC 1.
- USE THE CURRENT ROADSIDE DESIGN GUIDE TO ESTABLISH CLEAR ZONE REQUIREMENT AND LENGTH OF NEED (LON) REQUIREMENTS.



TYPICAL SECTION A-A
POSTS 3-8

TABLE 1		
SPEED MPH	TAPER	MINIMUM LENGTH FEET
LESS THAN 40	7:1	70
40 TO 55	10:1	100
60 TO 75	15:1	150



TYPICAL SECTION B-B
POSTS 1-2

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION

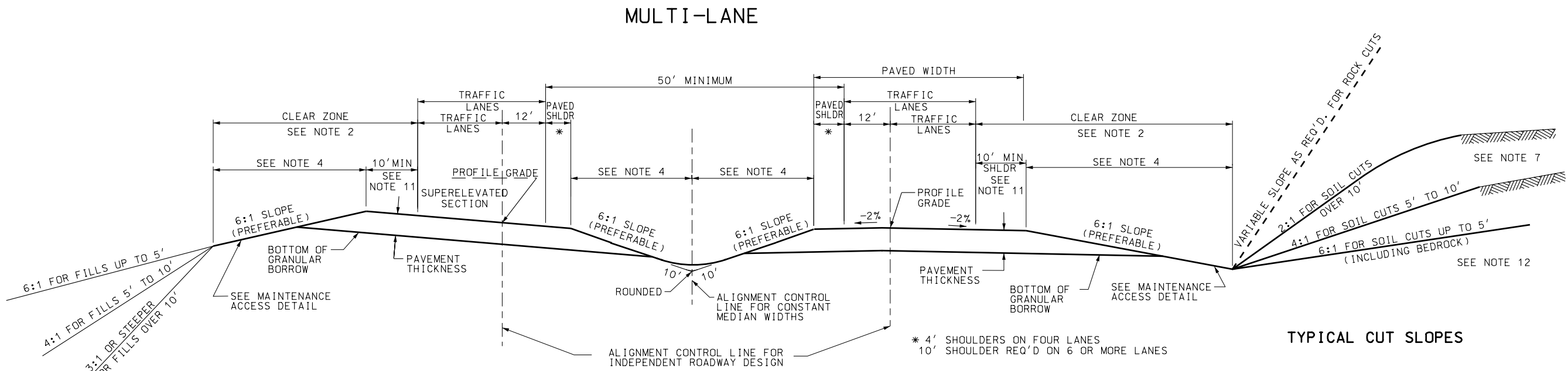
GRADING AND
INSTALLATION DETAILS
CRASH CUSHION TYPE H
(PARABOLIC FLARE)

STD DWG
CC 9B

REVISIONS			
NO.	DATE	APPR.	REMARKS
1	12-24-05	GS	MODIFIED RECOVERY AREA REQUIREMENTS, REVISED NOTES AND TABLE 1.

RECOMMENDED FOR APPROVAL
SALESMAN
RECOMMENDED FOR APPROVAL
SALESMAN
CHAIRMAN STANDARDS COMMITTEE
APPROVED
DEPUTY DIRECTOR
DATE
FEB.24.2005
DATE
FEB.24.2005

14-MAR-2005 DGN: F:\et\N\et\Standard_Drawing\Imperial\2005\Approved\Change\Approved\dd04.dgn

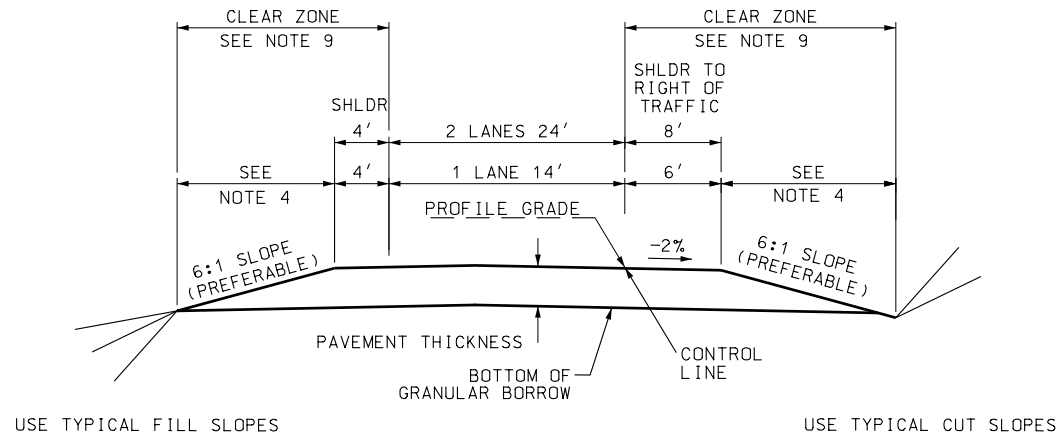


TYPICAL FILL SLOPES

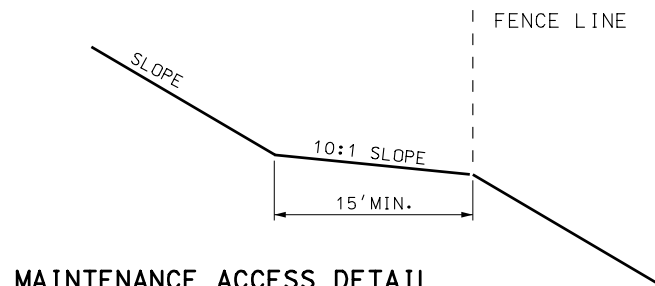
TYPICAL SECTION ON CURVE

TYPICAL SECTION ON TANGENT

TYPICAL CUT SLOPES



TYPICAL RAMP



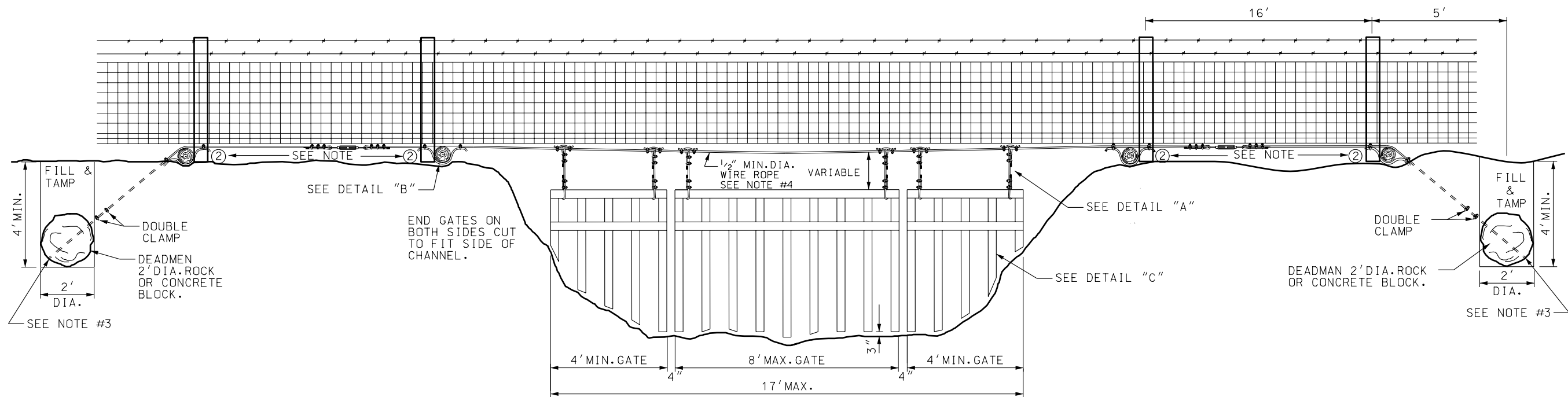
MAINTENANCE ACCESS DETAIL
SEE NOTE 13

NOTES:

1. USE THE CURRENT EDITION OF AASHTO A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS FOR DESIGN OF ROADWAY ELEMENTS.
2. USE THE CURRENT EDITION OF AASHTO ROADSIDE DESIGN GUIDE FOR CLEAR ZONE REQUIREMENTS. CLEAR ZONE MAY EXTEND INTO CUT OR FILL SLOPES.
3. STANDARDS SHOWN ARE RECOMMENDED VALUES. EXCEED STANDARDS IF CONDITIONS PERMIT.
4. IN FILL CONDITIONS MAINTAIN A CONSTANT SLOPE FROM THE EDGE OF THE PAVEMENT TO THE OUTER EDGE OF THE CLEAR ZONE. IN CUT CONDITIONS MAINTAIN A CONSTANT SLOPE FROM THE EDGE OF THE PAVEMENT TO THE BOTTOM OF THE GRANULAR BORROW LAYER OR PROVIDE OTHER MEASURES TO DRAIN ALL PAVEMENT THICKNESS LAYERS. MAINTAIN A MINIMUM OF ONE FOOT VERTICAL DISTANCE FROM THE BOTTOM OF THE GRANULAR BORROW LAYER TO THE BOTTOM OF THE CUT DITCH. THERE MAY BE CUT FORESLOPES AND BACKSLOPES IN THE CLEAR ZONE.
5. TRANSITION FROM FLAT TO STEEPER CUT AND FILL SLOPES IN SUFFICIENT DISTANCE TO PROVIDE A NATURAL PLEASING APPEARANCE.
6. PAVEMENT THICKNESS CONSISTS OF HARD SURFACING, UTBC AND GRANULAR BORROW (IF USED).
7. INSTALL SURFACE DITCH (OPTIONAL) WHEN SHEET FLOW DRAINAGE IS TOWARDS CUT SLOPE. DRAIN SURFACE DITCH TO NATURAL DRAINAGE OR ROADSIDE DITCH. PROVIDE OTHER MEASURES TO PREVENT ERODING CUT SLOPES IF SURFACE DITCH IS OMITTED. SEE STD DWG DD 2 FOR DETAILS.
8. SEE STD DWG DD 2 FOR TYPICAL SECTION ON DITCH FLARING AND BENCHED SLOPE.
9. DESIGN SPEED CHANGES THROUGHOUT LENGTH OF RAMP. USE APPLICABLE CLEAR ZONE.
10. USE A 12' MINIMUM OUTSIDE SHOULDER WHEN HEAVY TRUCK TRAFFIC EXCEEDS 250 DDHV.
11. RANGE OF SUPERELEVATION IS THE PAVED WIDTH.
12. THE SLOPES SHOWN FOR CUT AND FILL HEIGHTS ARE SUGGESTED VALUES. SLOPES MAY DEVIATE FROM THESE SUGGESTED VALUES TO MEET PROJECT SPECIFIC REQUIREMENTS.
13. PROVIDE MAINTENANCE ACCESS OF 15' MINIMUM WIDTH ON A 10:1 MAXIMUM SLOPE FROM TOE OF SLOPE TO FENCE LINE WHERE POSSIBLE.

REVISIONS		UTAH DEPARTMENT OF TRANSPORTATION		STANDARD DRAWING TITLE	
NO.	DATE	BY	REVISIONS	STANDARD	TITLE
1	02/24/05	B.J.	ADDED MAINTENANCE ACCESS DETAIL, REVISED MINIMUM MEDIAN WIDTH, MADE 6:1 SLOPE A PREFERABLE DIMENSION, NOTE 13 ADDED.	STD DWG	DD 4
				APPROVED	DEPUTY DIRECTOR
				RECOMMENDED FOR APPROVAL	CHAIRMAN STANDARDS COMMITTEE
				DATE	FEB. 24, 2005
				DATE	FEB. 24, 2005
				REMARKS	

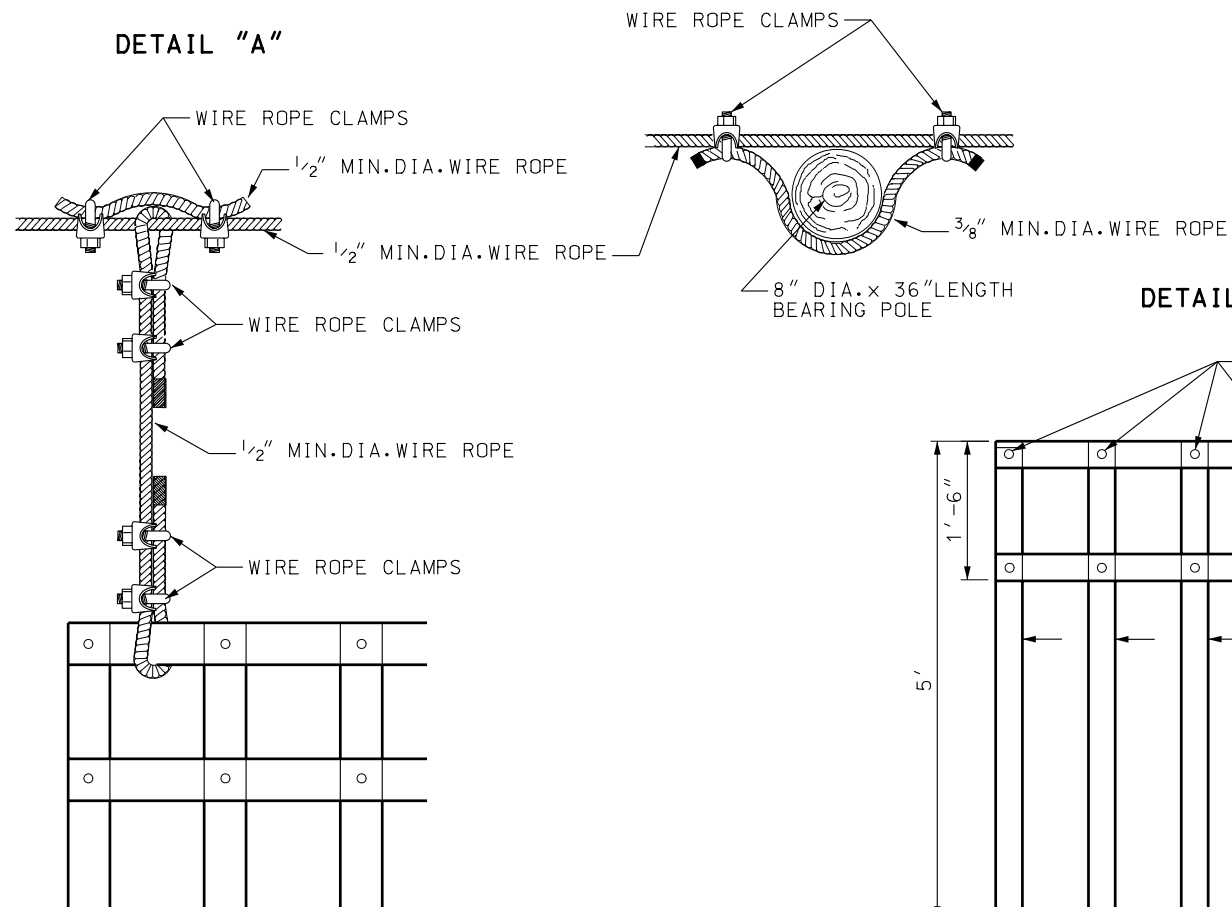
14-MAR-2005 DGN File: N:\\Ead\\Standard Drawings\\Imperial\\2005\\Approved\\xChange\\Approved\\f983.dgn



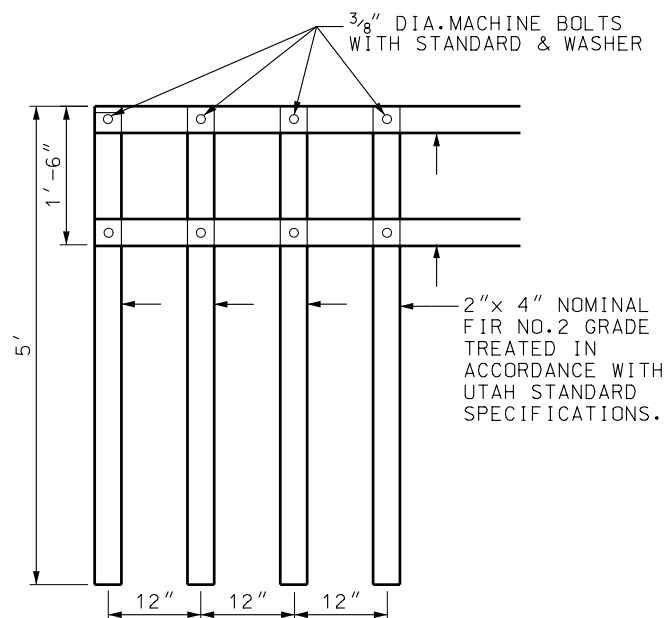
DETAIL "B"

INSTALLATION DETAIL

DETAIL "A"



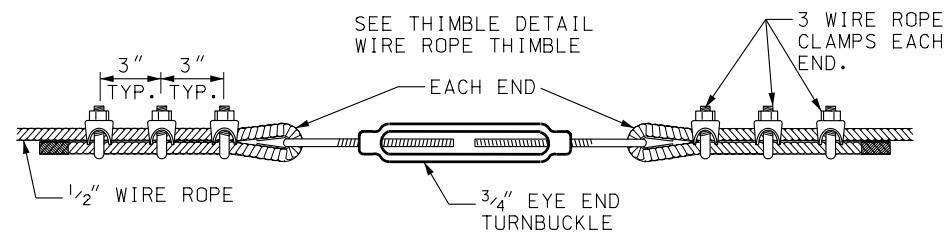
DETAIL "C"



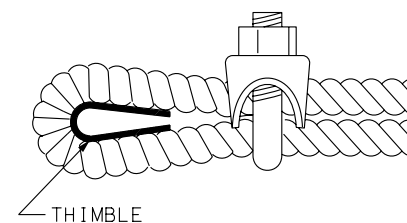
NOTES:

1. INSTALL BEARING POLES, DEADMAN AND TURN BUCKLE THE SAME ON BOTH SIDES ON THE CHANNEL.
2. INSTALL WIRE ROPE ON THE UPSTREAM SIDE OF THE FENCE POSTS.
3. WRAP WIRE ROPE AROUND ROCK AND CLAMP WITH A DOUBLE CLAMP.
4. USE 1/2" DIA. WIRE 6"x 12" WITH A BREAKING STRENGTH OF 10,000 lbs.

DETAIL "D"



THIMBLE DETAIL



UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION

SWING GATE TYPE I
FOR GATES
LESS THAN 17'

STD DWG
FG 3

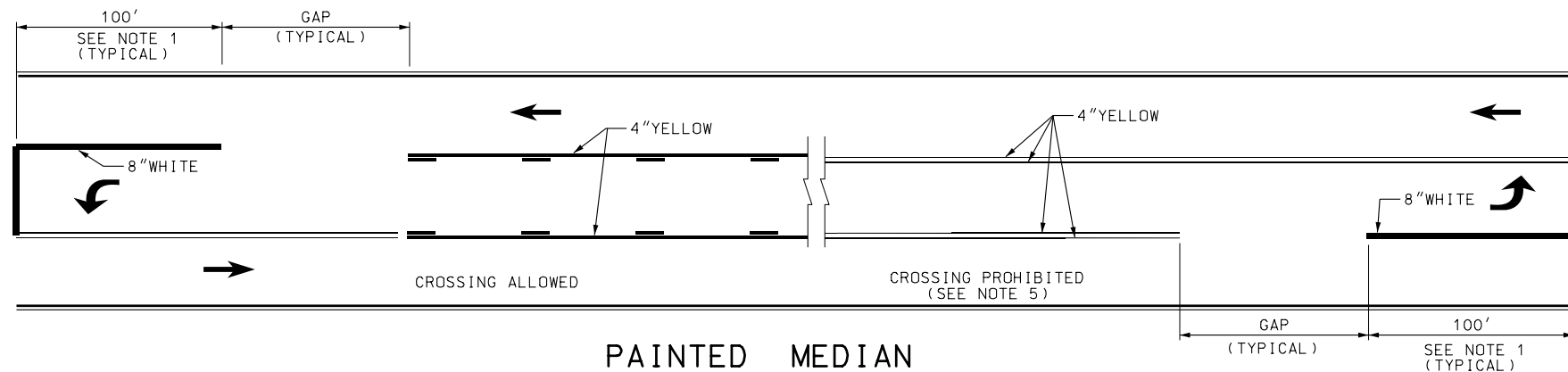
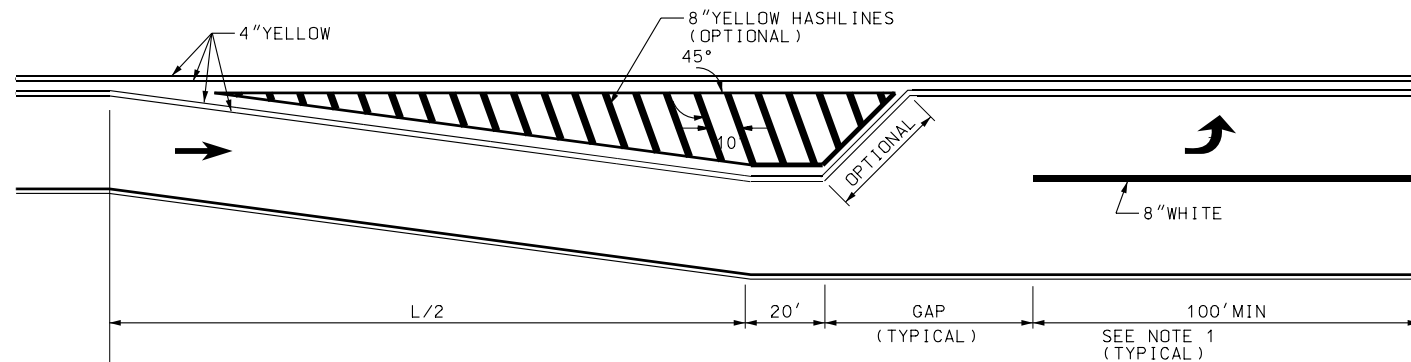
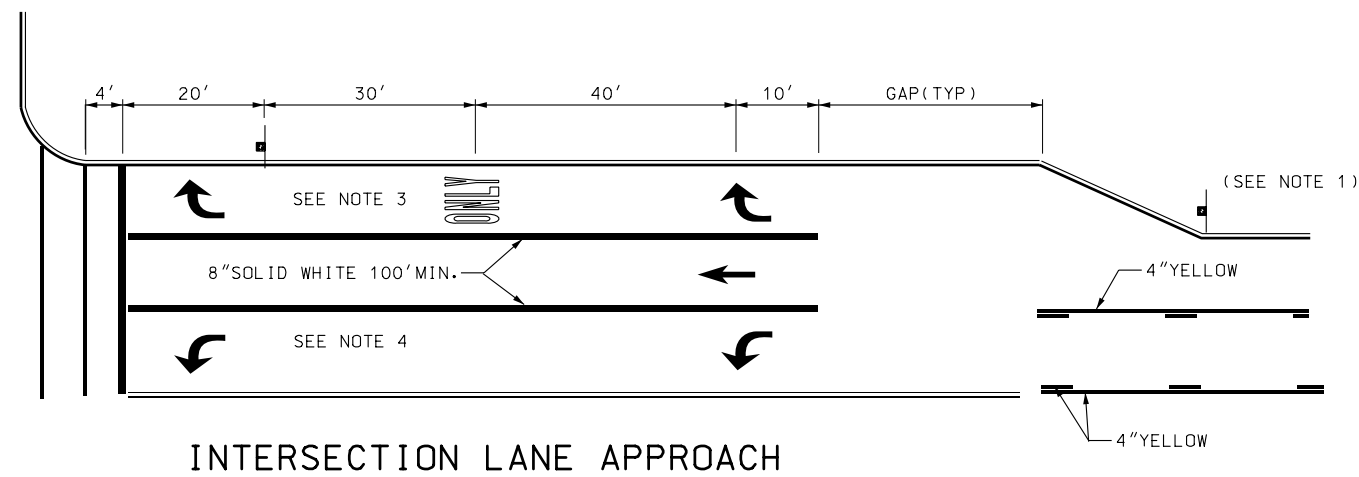
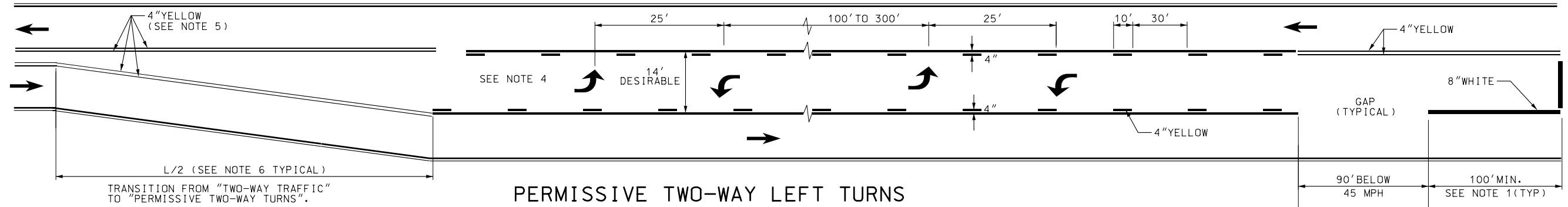
REVISIONS
1 02/24/05 B.A. CORRECTED TYPOGRAPHICAL ERRORS.

RECOMMENDED FOR APPROVAL
CHAIRMAN STANDARDS COMMITTEE
APPROVED
DATE
FEB. 24, 2005
DEPUTY DIRECTOR
DATE
FEB. 24, 2005

STANDARD DRAWING TITLE

REMARKS

14-MAR-2005 D:\1et N\Std\Standard Drawings\Imperial\2005\Approved\Change\Approved\std05.dgn



NOTES:

1. USE A CAPACITY ANALYSIS TO DETERMINE THE LENGTH OF STORAGE REQUIRED FOR TURN LANE. A MINIMUM LENGTH OF 100 FEET IS REQUIRED.
2. USE THE STANDARD ALPHABET FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS FOR PAVEMENT MESSAGES.
3. USE PAVEMENT MARKINGS CONSISTING OF ARROWS, THE WORD "ONLY" IN LANE, AND THE STANDARD SIGN R3-7R WHEN THE LANE IS A MANDATORY MOVEMENT.
4. PAVEMENT MARKINGS ARE OPTIONAL FOR MANDATORY LEFT TURN LANES AND TWO-WAY LEFT TURN LANES.
5. CREATE A CROSSING PROHIBITED ISLAND OR MEDIAN BY PLACING TWO DOUBLE YELLOW LINES FOR EACH DIRECTION (4 SOLID YELLOW LINES TOTAL)
6. TAPER FORMULA: $L = SW$ FOR SPEEDS OF 45 MPH OR GRATER
 $L = WS^2/60$ FOR SPEEDS OF 40 MPH OR LESS.
7. FOR RAISED MEDIAN AND PLOWABLE END SECTION DETAILS SEE STD DWG GW 1

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION

RECOMMENDED FOR APPROVAL
CHAIRMAN STANDARDS COMMITTEE
APPROVED
FEB.24.2005
DATE

DEPUTY DIRECTOR
FEB.24.2005
DATE

PAINTED MEDIAN AND
AUXILIARY LANE
DETAILS

STANDARD DRAWING TITLE

STD DWG
ST 5

REVISIONS
1. 02/24/05 B.A. NOTE REFERENCE CORRECTED IN UPPER LEFT DETAIL.

NO. DATE APPR. REMARKS